APPLICATION OF

VIRGINIA ELECTRIC AND POWER COMPANY D/B/A DOMINION VIRGINIA POWER **CASE NO. PUE010154**

For a certificate of public convenience and necessity for facilities in Loudoun County: Beaumeade-Beco 230 kV Transmission Line and Beaumeade-Greenway 230 kV Transmission Line

REPORT OF ALEXANDER F. SKIRPAN, JR., HEARING EXAMINER

January 25, 2002

According to Virginia Power, demand for electricity in eastern Loudoun County is growing rapidly. Virginia Power pegs much of this growth to the intense energy demands of computer data centers. To meet its forecasted demands for eastern Loudoun County, among other facilities, Virginia Power has proposed to construct two single-circuit 230 kV transmission lines. One line is proposed to be approximately two miles in length; the other line is proposed to be approximately nine-tenths of a mile. This case examines the need for the proposed transmission lines and, if needed, the specific routes for these lines.

HISTORY OF THE CASE

On March 15, 2001, as revised on March 23, 2001, Virginia Electric and Power Company d/b/a Dominion Virginia Power ("Virginia Power" or "Company") filed an application for approval and certification of electric facilities in eastern Loudoun County. By Commission orders dated April 9, and 12, 2001, the Commission docketed the application; appointed a hearing examiner to conduct further proceedings; established a procedural schedule for the filing of prepared testimony and exhibits; scheduled a hearing in Leesburg, Virginia; and directed Virginia Power to provide public notice of its application.

As of May 21, 2001, the following parties filed notices of protest: Loudoun County Board of Supervisors ("Loudoun County"); City of Fairfax ("City"); DuPont Fabros Development ("DuPont Fabros"); Islamic Saudi Academy, Inc. ("Islamic Academy"); Broadlands Associates ("Broadlands"); Northern Virginia Regional Park Authority ("Park Authority"); Regency Homeowner's Association, Inc. ("Regency"); Cameron Chase Homeowners Association ("Cameron Chase"); and WorldCom Inc., DullesGateway Associates, LLC, TAB I Associates, LLC, Beaumeade Associates Limited Partnership, North Dulles Retail Associates, LP, Dulles-Berry Limited Partnership, and Boston Properties, L.P. (referred to collectively as "WorldCom"). Other letters offering comments on Virginia Power's proposal were received during the course of this case from the following: Joseph J. Maio, chairman of the Loudoun County Open Space Advisory Committee; Frederic V. Malek; Michael and Diane Godby; Congressmen Frank R. Wolf; J. W. Marriott, Jr.; Board of Directors of the Broadlands

Residents; Gary W. Moorman; State Senator Bill Mims; Delegate Joe T. May; Delegate Richard Black; Eric E. Zicht; Thomas and Kimberly Houck; and Delegate Robert G. Marshall.

On June 8, 2001, Regency filed a Motion for Extension of Procedural Schedule. In support, counsel for Regency stated that it needed additional time to develop information concerning the impact of the proposed line. Loudoun County, the City, DuPont Fabros, and the Park Authority joined Regency in its motion. No party, including the Company and Staff, opposed Regency's motion. On June 12, 2001, the Hearing Examiner granted Regency's proposed procedural schedule.

On July 11, 2001, Regency filed a special motion seeking a ruling on the validity of Virginia Power's objections to the second set of interrogatories propounded by Regency. Regency requested that the Company be compelled to provide the identities and addresses of the data center developers and potential customers upon which Virginia Power determined the need for its proposed new facilities. On July 20, 2001, Broadlands joined Regency indicating its own need to verify the claims Virginia Power made in its application. Regency's special motion was denied in a Hearing Examiner's Ruling dated August 7, 2001. Subsequently, on August 10, 2001, Regency filed a Motion to Clarify Hearing Examiner's Ruling ("Motion to Clarify") and a Motion to Compel Notice of an Alternative Corridor ("Motion for Notice"). In the Motion to Clarify, Regency stated its objections to the Hearing Examiner's Ruling regarding its special motion dated August 7, 2001, requested certification of the issues raised in its special motion to the Commission, and asked for clarification of the Examiner's August 7th Ruling. In its Motion for Notice, Regency sought an order directing Virginia Power to provide notice for and study of an alternative transmission route along the Loudoun County Parkway. On August 16, 2001, DuPont Fabros and Cameron Chase filed a Statement in Support of Regency's Motion to Require Notice of an Additional Alternative Route. In a Hearing Examiner's Ruling dated August 16, 2001, the Examiner: (i) noted Regency's objections, (ii) denied Regency's requested certification,[1] (iii) clarified that Regency was entitled to redacted copies of the

[1] The pertinent portion of the Examiner's Ruling was as follows:

> Under the Commission's procedural rules, a ruling denying further participation of a party may be certified directly to the Commission. A hearing examiner may certify only ***other material issues***. As used here, an ***other material issue***, like denying further participation, refers to an issue that has a direct bearing on the outcome or the conduct of a case. From a practical perspective, a ruling on such an issue serves to decide the case. Rarely, if ever, would a discovery issue rise to the level of materiality envisioned in this rule.
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> In this case, denying Regency's request for the names and addresses of data centers does not have a direct bearing on the outcome of this case, *i.e.,* whether to certificate construction of the proposed transmission facility and, if so, where the facility will be constructed. Virginia Power, not Regency, continues to bear the

documentary evidence and to receive the Company's policies relating to the retention or destruction of electronic mail, and (iv) denied Regency's Motion for Notice as unnecessary because the Loudoun County Parkway route is not significantly different from the routes described in the original notice.

On July 18, 2001, DuPont Fabros, Cameron Chase, Broadlands, Regency and Loudoun County, by counsel, filed a Motion for Stay and to Consolidate. These parties maintained that Virginia Power will file a subsequent application for approval of a second transmission line for eastern Loudoun County. Because the routing of the pending transmission project likely will have an effect on the planning for the second project, these parties seek a stay of the current proceeding and consolidation of the cases for concurrent consideration by the Commission. In a Hearing Examiner's Ruling dated August 14, 2001, the motion was denied without prejudice. By denying the motion without prejudice, the Examiner permitted the parties to renew their motion if they were able to build a sufficient record concerning the interrelationship and timeline for the two projects. This motion was renewed during the hearing and the parties were given the opportunity to address this issue on brief.[2]

On July 19, 2001, a hearing was convened at 10:00 a.m. at the Loudoun County Government Center, 1 Harrison Street, S.E., Leesburg, Virginia, for the purpose of receiving public comment. Twenty-nine public witnesses presented testimony. Also appearing were Guy T. Tripp, III, Esquire, on behalf of Virginia Power; Michael J. Quinan, Esquire, on behalf of DuPont Fabros and Cameron Chase; and Wayne N. Smith, Esquire, on behalf of the Staff.

In a Hearing Examiner's Ruling dated July 31, 2001, the parties were notified that the Examiner would make a walking viewing of the routes of the proposed transmission line and the alternative routes. The parties, including Virginia Power and Staff, were invited to participate in the viewing, which was scheduled to begin on August 20, 2001, at 10:00 a.m. at the Beaumeade Substation. On August 20, 2001, the walking viewing was held as scheduled.

On August 20, 2001, Regency filed a Motion for Modification to Procedural Schedule, in which it requested leave to file supplemental testimony thirty days from the ruling on the motion. Regency stated that it needed additional time to obtain and review the additional information Virginia Power was compelled to provide based on the Examiner's Ruling dated August 16, 2001. In a Hearing Examiner's Ruling dated August 21, 2001, the procedural schedule was modified to permit Regency to file, on September 17, 2001, supplemental testimony on issues related to the requested documents.

On August 29, 2001, Staff filed a Motion for Leave to File Supplemental Testimony on September 17, 2001, regarding the technology, the design, and the costs of constructing an underground transmission line. These issues were raised for the first time in testimony filed by Regency on August 22, 2001. In addition, on August 30, 2001, Islamic Academy filed for leave

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> burden of proving need. Denying Regency's request does not establish or prove need. Accordingly, I ***decline to certify*** the Ruling to the Commission.

[2] Tr. at 1041-42.

to amend the direct testimony of its witness, Anthony Nozzoli. Both motions were granted by a Hearing Examiner's Ruling entered on September 5, 2001.

On October 3, 4, 5, and 9, 2001, hearings were convened in Richmond for receiving evidence. Representing Virginia Power at the hearing were Guy T. Tripp III, Esquire, James C. Dimitri, Esquire, Renata Manzo, Esquire, and Jill C. Hayek, Esquire. Michael J. Quinan, Esquire, appeared on behalf of DuPont Fabros and Cameron Chase. Charles L. Shumate, Esquire, appeared on behalf of the City. Patrick O'Hare, Esquire, appeared on behalf of WorldCom. Thomas B. Nicholson, Esquire, and Mark C. Looney, Esquire, appeared on behalf of Broadlands. Cliona Robb, Esquire, appeared on behalf of the Park Authority. Lawrence E. Kelly, Esquire, appeared on behalf of Loudoun County. Sherry D. Soanes, Esquire, appeared on behalf of the Islamic Academy. Matt Pethybridge, Esquire, appeared on behalf of Regency. Wayne N. Smith, Esquire, and Rebecca Hartz, Esquire, represented the Staff. Filed with this Report are transcripts from each of the hearings.

The parties, including Virginia Power and the Staff, filed briefs on November 21, 2001, and reply briefs on December 7, 2001.

SUMMARY OF THE RECORD

In its application, Virginia Power stated that the need for the proposed transmission lines is related directly to the growth in demand for electric service "by the recent, rapid development of computer data centers and other Internet and technology related enterprises that have been constructed or are under construction in eastern Loudoun County."[3] This area experienced annual growth in electric demand of about 7.7% from 1995 through 2000, with peak loads increasing from 223.6 MVA to 340.2 MVA.[4] Spurred by the demands of computer data centers, Virginia Power projected peak demands to increase to between 626.3 MVA and 718.4 MVA for 2003 and to between 663.9 MVA and 790 MVA for 2004.[5] The Company claimed that its existing distribution facilities will be inadequate to serve its projected loads reliably after 2002.[6] Consequently, Virginia Power intends to build two new substations, each adjacent to new data centers.[7] The Company's proposed new transmission lines, which are the subject of this application, will connect the two new substations to the existing Beaumeade Substation.[8]

The first new substation is the Beco Substation, which is located northeast of the Beaumeade Substation. Originally, Virginia Power proposed to connect the Beco and Beaumeade Substations ("Beco Line") by constructing a new single-circuit 230 kV transmission line that would run eastward from the Beaumeade Substation along the Washington and Old

[3] Application at 2.
[4] Application Appendix at 3.
[5] *Id.* at 3-4. The lower number for each year is the Company's forecast based on 70% only of contracted new load. The higher number for each year is the Company's forecast based on 70% of the potential new load.
[6] Application Appendix at 4.
[7] Application at 2.
[8] *Id.*

Dominion Trail ("W&OD Trail") for approximately 0.7 miles and then northward for approximately 0.9 miles to the Beco Substation.[9] On July 16, 2001, Virginia Power revised its proposal regarding the Beco Line. Virginia Power now proposes tapping into the existing double circuit 230 kV that runs along the W&OD Trail at a point approximately 0.7 miles east of the Beaumeade Substation and running a line north to the proposed Beco Substation.[10] The Company presented no alternatives concerning the Beco line.

The second new substation is the Greenway Substation, which is located southwest of the Beaumeade Substation. Virginia Power's recommended route for the transmission line connecting the Beaumeade and Greenway substations ("Greenway Line"), designated as Segment 19, is approximately two miles in length.[11] Beginning at the Beaumeade Substation, the line extends west for a short distance and then southwest for about 1.6 miles along the east side of Smiths Switch Road and Waxpool Road.[12] The line then turns south through a wooded area to the Greenway Substation.[13] Along Smiths Switch Road the proposed line would pass by the Ashburn Corporate Center and Cameron Chase subdivision.[14] Along Waxpool Road the proposed line would pass by MCI-WorldCom and the planned site for the Islamic Saudi Academy.[15] When the proposed line passes south through the wooded areas, the proposed line would pass by MCI-WorldCom and the Regency subdivision.[16]

Virginia Power provided four alternative routes for the Greenway Line. The first alternative, Segment 20, would run 0.6 miles eastward from the Beaumeade Substation along the W&OD trail; then south for 0.8 miles along the edge of the proposed Broad Run Golf Course, crossing Waxpool Road between Broad Run and the proposed Beaumeade Business Park and continuing along Broad Run to Shellhorn Road; and then along Shellhorn Road for approximately 1.7 miles to the Greenway Substation.[17] The second alternative, Segment 20-a, would follow the same path as Segment 20, but instead of following Broad Run all the way to Shellhorn Road, the line would follow the MCI WorldCom property line to the Greenway Substation.[18] Segment 20-a would be approximately 3.0 miles in length, or about 0.1 miles shorter than Segment 20.[19] The third alternative, Combination of 19 and 20, would follow the route of Segment 20 until it reached Waxpool Road where it would follow Waxpool Road westward and then south around MCI WorldCom and continue along the route proposed for Segment 19.[20] This route would be approximately 3.5 miles in length.[21] The fourth alternative

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[9] *Id.* Appendix at 16.
[10] Exhibit JEV-46, at 1-2.
[11] Application Appendix at 20.
[12] *Id.*
[13] *Id.*
[14] *Id.*; Exhibit JBB-94, Attachment JBB-R2.
[15] *Id.*
[16] *Id.*
[17] Exhibit JBB-49, at 6; Exhibit JBB-94, Attachment JBB-R2.
[18] *Id.*
[19] Application Appendix at 13.
[20] *Id.*
[21] *Id.*

considered by Virginia Power, the Loudoun County Parkway route, would place the proposed transmission line in the median of the Loudoun County Parkway.[22] However, because the Virginia Department of Transportation ("VDOT") opposes such use of a highway median, the Company did not actively pursue this as an alternative.[23]

Virginia Power supported its application with the testimony of four witnesses. John D. Bruce, an engineer in the Company's Distribution Planning Department, described the need for the two new distribution substations, which he attributed to the "unusually rapid growth in the demand for electric service" in those areas.[24] Alasdair I. Macdonald, an engineer in the Company's Bulk Power Supply Department, addressed the need for two new substations to be connected to the Company's transmission network by two 230 kV transmission lines.[25] John Vonier,[26] a transmission project engineer at Virginia Power, supported the Company's proposed design characteristics of the proposed transmission lines and submitted electric and magnetic field ("EMF") data concerning the proposed transmission lines. John B. Bailey, coordinator-siting and permitting for Virginia Power, testified concerning the selection and impact of the proposed transmission lines and their alternative routes.[27]

As discussed above, on July 16, 2001, Virginia Power amended its proposal concerning the Beco Line. As a consequence, Virginia Power filed the supplemental testimonies of Messrs. Macdonald, Vonier, and Bailey. In his supplemental testimony Mr. Macdonald provided the cost of modifying the Company's proposed route for the Beco Line.[28] Mr. Vonier presented the Company's modified route and design for the Beco Line in his supplemental testimony.[29] Finally, Mr. Bailey commented on the route selection and environmental impact of the Company's new proposal for the Beco Line in his supplemental testimony.

During the public hearing held in Leesburg on July 19, 2001, twenty-nine public witnesses offered comments. The testimony of each of these witnesses is summarized below.

1. Drew Hiatt, supervisor, Loudoun County, explained the official actions taken by Loudoun County and made some additional personal comments.[30] Loudoun County has adopted a formal resolution in opposition to Segment 19.[31] Instead, Loudoun County supports burying the Greenway Line in the median of the Loudoun County Parkway.[32] As a second option, Loudoun County would support Segment 20 for the Greenway Line. Supervisor Hiatt maintained that Loudoun County's recommendations were "most sensible and the safest and

[22] Exhibit JBB-49, at 8.
[23] *Id.*
[24] Exhibit JDB-1, at 2.
[25] Exhibit AIM-15.
[26] Exhibit JEV-44.
[27] Exhibit JBB-49.
[28] Exhibit AIM-16.
[29] Exhibit JEV-46.
[30] Hiatt, Tr. at 6-10.
[31] *Id.* at 6.
[32] *Id.*

most unobtrusive alignment option."[33] Also, Supervisor Hiatt pointed out that many of the homeowners adversely affected by Segment 19 had no knowledge of such a possibility when they decided to locate in either Cameron Chase or Regency.[34] Finally, Supervisor Hiatt was concerned with the possible adverse health effects of EMF associated with the proposed transmission lines and the adverse impact of the proposed transmission line on property values on the residential and existing commercial real estate along the Company's proposed Segment 19.[35]

2. Steve Singlar opposed Segment 19 based on concerns for an expected loss in property values for homes along the route and on concerns for the health of his wife and seven-month old daughter, related to the unknown hazards associated with transmission lines.[36] In contrast to Segment 19, Mr. Singlar asserted that Segment 20 or the Loudoun County Parkway routes would not disrupt existing residential properties.[37]

3. Alice Eelman, vice president of Regency, claimed that proposed Segment 19 ignores Loudoun County's county-wide transportation plan, which would construct Route 789 in the tree buffer between the MCI WorldCom campus and Regency.[38] Segment 19 uses those trees as a buffer between the Greenway Line and Regency. However, Ms. Eelman asserted that if Route 789 is constructed, MCI WorldCom is under no obligation to leave any of the tree buffer.[39]

Further, Ms. Eelman alleged that Virginia Power failed to follow the FERC guidelines in choosing Segment 19 as its preferred route.[40] Specifically, Ms. Eelman states that Segment 19 fails to follow FERC guidelines that call for avoiding prime timbered areas, placing transmission facilities where natural cover is possible, and locating the facilities where there is an appropriate secondary use of the rights-of-way.[41]

4. Chris Epstein, president of Data Centers Now, testified in support of the Company's proposed Beco Line.[42] Data Centers Now is a developer of data centers and is planning to construct a new campus in Loudoun County in 2002 at the intersection of Route 28 and Severin Way.[43] The Beco Line will supply the electrical needs of this new campus. Indeed, Mr. Epstein stated that "[w]e cannot proceed with this project without the infrastructure support this line will provide."[44] Mr. Epstein further advised that he plans to begin constructing his new campus in

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[33] *Id.* at 7-8.
[34] *Id.* at 8.
[35] *Id.* at 9-10.
[36] Singlar, Tr. at 11.
[37] *Id.* at 11-12.
[38] A. Eelman, Tr. at 13-14.
[39] *Id.*
[40] *Id.* at 14-16.
[41] *Id.*
[42] Epstein, Tr. at 18.
[43] *Id.* at 19.
[44] *Id.* at 20.

late 2001 and that the Beco Line would need to be in service no later than July 1, 2002.[45] Finally, Mr. Epstein estimated that the demand for the new campus will be 100 MW, with a load factor of 90 percent.[46]

5. Melinda DiPrinzio, a Regency resident, declared her opposition to Segment 19 and the Greenway Substation.[47] Ms. DiPrinzio pointed out that the Greenway Line is needed to serve new data centers and not residential loads.[48] Thus, Ms. DiPrinzio argued that if the Greenway Line is built, it should be built following Segment 20, which currently is undeveloped land zoned for commercial and industrial development.[49]

6. J. Winston Porter, president of the Paeonian Springs council, voiced concerns about placing transmission lines along the W&OD Trail.[50] According to Mr. Porter, Paeonian Springs is a small village that is bisected by the W&OD Trail.[51] Mr. Porter testified that construction of a transmission line on the W&OD Trail "would negatively affect our lifestyle and use of the trail, not to mention a sharp hit on property values of those such as ourselves or close to the trail."[52] In addition, Mr. Porter believed that more study of alternatives, need, and tree loss should be undertaken.[53]

7. Chuck Harris, supervisor, Loudoun County, discussed the concepts of "smart growth," which was the platform of eight of the nine supervisors elected to the current board.[54] Supervisor Harris acknowledged the need for improved infrastructure in eastern Loudoun County, but strongly believes that Virginia Power chose the wrong route for the Greenway Line.[55] Supervisor Harris supported running the Greenway Line along the Loudoun County Parkway, either above or below ground.[56] Also, Supervisor Harris found Segment 20 preferable to the Company's proposed Segment 19 and questioned Virginia Power's analysis of the advantages and disadvantages of Segment 20.[57] For example, Virginia Power listed impact on wetlands as a disadvantage of Segment 20.[58] However, a golf course has been approved for the wetlands area along Segment 20 between the W&OD Trail and Wax Pool Road, and another golf course is proposed south of Wax Pool Road.[59] Supervisor Harris contended that running a transmission line on the border of wetlands cannot impact wetlands any more or any worse than

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[45] *Id.*
[46] *Id.* at 20-21.
[47] DiPrinzio, Tr. at 23.
[48] *Id.* at 24.
[49] *Id.*
[50] Porter, Tr. at 27-30.
[51] *Id.* at 27.
[52] *Id.* at 28.
[53] *Id.* at 28-30.
[54] Harris, Tr. at 31-38.
[55] *Id.* at 32.
[56] *Id.*
[57] *Id.* at 36.
[58] *Id.*
[59] *Id.*

a golf course.[60] In summary, Supervisor Harris encouraged a more prudent look at the option of burying the transmission line, implored the Commission to consider the impact of the proposed transmission lines on residences and on the people that live along the proposed routes, and to consider Loudoun County's land use plans.[61]

8. Peter Eelman, a resident of Regency, recommended Segment 20 over Segment 19, based on the FERC's guidelines.[62] Mr. Eelman criticized Virginia Power for failing to follow such guidelines.[63]

9. David Edstrom, a resident of Regency, explained that he purchased Dominion Resources stock in the early 1980's because they are a monopoly and thus, have predictable performance, and because as an employee in the computer industry he knew that computer-driven demand for electricity would continue to grow.[64] Nonetheless, Mr. Edstrom contended that there has been a downturn in the computer industry.[65] Consequently, Mr. Edstrom asked that the Company not be permitted to fast track its proposal. Moreover, Mr. Edstrom complained that Regency had a difficult time finding legal representation because many attorneys either work for Virginia Power or did not want to be labeled as having fought against them.[66]

10. Sue Purnell, a resident of Regency, voiced concern regarding the electromagnetic emission of the proposed transmission lines.[67] Ms. Purnell compared the emissions of cell phones, which emit one to two watts, and cellular and paging base stations, which emit forty to eighty watts, with the significantly higher emissions of the proposed transmission lines.[68]

11. Sandra McCoy, a resident of Regency, testified against Segment 19.[69] Ms. McCoy based her opposition on concerns for the quality of life and health of residents.[70]

12. Wolfgang Toole, a resident of Regency, strongly opposed Segment 19.[71] Mr. Toole explained his fear that the Greenway Line following Segment 19 would reduce the value of his property by forty percent and solely benefit commercial customers.[72] Furthermore, Mr. Toole observed that as a chief technology officer for a company that runs computer equipment he

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[60] *Id.* at 37.
[61] *Id.* at 37-38.
[62] P. Eelman, Tr. at 39-40.
[63] *Id.*
[64] Edstrom, Tr. at 40-41.
[65] *Id.* at 41.
[66] *Id.* at 43-44.
[67] Purnell, Tr. at 45-46.
[68] *Id.*
[69] McCoy, Tr. at 47-49.
[70] *Id.*
[71] Toole, Tr. at 50.
[72] *Id.*

believes that the computer industry is not doing well.[73] In support, Mr. Toole pointed to several recent articles describing job cuts announced by data centers and communications companies.[74]

13. Stephen T. Ames, a resident of Regency, opposed Segment 19 based on health and safety concerns.[75] Mr. Ames related the story of a high school friend that was burned on over fifty percent of his body when he climbed a power tower on a dare.[76] Mr. Ames recommended that the Greenway Line be located in a safer, undeveloped area.

14. Patricia Smith, a resident of Paeonian Springs, spoke against placing transmission lines along the W&OD Trail in the Ashburn area.[77] Ms. Smith urged the Commission to view the W&OD Trail as a whole and to consider the importance of the W&OD Trail on the community today and how that has changed over the past twenty years.[78]

15. John Gallagher, a resident of Ashburn, supported Loudoun County and called for the transmission lines to be located away from homes and preferably underground.[79] Mr. Gallager asserted that underground facilities should be required even if they have a higher initial cost and despite Virginia Power's lack of expertise.[80] Mr. Gallagher submitted that such decisions should be based on what is in the best interest of the community.[81]

16. Elise Plavcan, a resident of Regency, argued that the focus in this case should be on the future of Loudoun County and the future of its people, "because people do count."[82] Ms. Plavacan echoed the concerns of earlier witnesses regarding the potential adverse health effects of transmission power lines and commented that such lines would "be visually terrible to look at."[83]

17. Ken Turner, a member of the Citizens for Power-Lines Along Commercial Corridors ("CPACC"), objected to the construction of any transmission lines on top of residential areas, parks and recreational areas, schools, and day care centers.[84] Mr. Turner supported building the transmission lines, but recommended that the Commission adopt one of the routes endorsed by Loudoun County.[85] In addition, Mr. Turner offered an analysis of studies of the health risks of EMFs.[86] In essence, Mr. Turner found that the issue remained open.[87] As Mr.

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[73] *Id.* at 51-52.
[74] *Id.* at 52.
[75] Ames, Tr. at 54.
[76] *Id.* at 54.
[77] Smith, Tr. at 56.
[78] *Id.* at 57-58.
[79] Gallagher, Tr. at 64.
[80] *Id.* at 64-65.
[81] *Id.* at 65.
[82] Plavacan, Tr. at 67.
[83] *Id.* at 68.
[84] Turner, Tr. at 69.
[85] *Id.* at 70-71.
[86] *Id.* at 71-76.

Turner put it, "Any fair minded person who takes the time to review all of the data has to walk away just not knowing."[88] Mr. Turner offered several examples of cases in which the Commission altered the route of a proposed transmission line based on the impact the new line would have on people and places.[89]

18. James L. McAuliffe, a resident of Cameron Chase, declared strong opposition to Segment 19.[90]

19. Julie R. Weeks, president of the Friends of the W&OD Trail, spoke on behalf of the more than 600 households along the trail as well as for the estimated two million people a year that use the trail.[91] Ms. Weeks stressed the need to keep the trail as "an unbroken and steadfast recreational destination, a non-motorized transportation corridor and a wildlife corridor and habitat."[92] Ms. Weeks applauded Virginia Power's decisions not to use the W&OD Trail as a corridor for a new transmission line from Ashburn to Leesburg and for its revised plan concerning the Beco Line.[93] Ms. Weeks expressed hope that the Company would not utilize the W&OD Trail in relation to the Greenway Line.[94]

20. Ben Tompkins, Esquire, of Reed, Smith, Hazel & Thomas, spoke on behalf of a group of landowners collectively referred to in this Report as WorldCom.[95] These landowners support Loudoun County's proposal to bury the transmission line along the Loudoun County Parkway.[96] Also, these landowners endorse Segment 19, which runs along the western boundary of the MCI WorldCom property.[97] Likewise, these landowners oppose Segment 20, which would split existing parcels planned for development and would have a greater environmental impact than Segment 19.[98]

21. Mark T. Steffler, a resident of Regency, stated that human beings matter.[99] Mr. Steffler challenged supporters of Segment 19 to live in one of the homes affected by the Greenway Line.[100]

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[87] *Id.*
[88] *Id.* at 75.
[89] *Id.* at 76-77.
[90] McAuliffe, Tr. at 79-80.
[91] Weeks, Tr. at 81.
[92] *Id.* at 82.
[93] *Id.*
[94] *Id.* at 82-83.
[95] Tompkins, Tr. at 85.
[96] *Id.* at 86.
[97] *Id.*
[98] *Id.*
[99] Steffler, Tr. at 88.
[100] *Id.* at 92.

22. Thomas Pugh, a resident of Regency, strongly opposed Segment 19.[101] Mr. Pugh complained that the proposed transmission line would be intrusive to the Regency neighborhood and likely would adversely affect the value of his home.[102]

23. Linda Schlosser, a resident of Regency, agreed with earlier witnesses concerning the unproven health risks associated with EMF.[103] Ms. Schlosser feared that twenty years from now she and her neighbors may find out that EMF really does cause cancers or other terrible diseases.[104] Also, Ms. Schlosser pointed out that the trees along Segment 19 also provide a source of noise abatement, which is important because of the close proximity of Dulles Airport.[105] Furthermore, Ms. Schlosser emphasized that the new transmission lines and substations are needed for future commercial users. In contrast, Ms. Schlosser contended that the Company has chosen a route that will adversely impact current residential users over a route that would adversely impact future commercial users.[106]

24. Kerry Ogata, a resident of Cameron Chase, urged rejection of Segment 19 due to concerns regarding potential health hazards, loss of property value, and the lessening of their quality of life.[107] Cameron Chase, unlike Regency, has no tree barrier and no other way of mitigating the effects of the proposed transmission line.[108]

25. David Lutz, a resident of Cameron Chase whose property would be immediately adjacent to the power lines on Segment 19, strongly encouraged use of Segment 20.[109] Mr. Lutz contended that if Segment 19 is constructed, the transmission lines, along with their noise and potential hazards, "are right in our lives."[110]

26. Timothy Kampa, owner and developer of the Broad Run Golf Course, described the proposed course as having an eighteen-hole championship course, a nine-hole short course, and an elaborate training facility.[111] Mr. Kampa stated that he plans to begin construction of the $17 million project this summer.[112] To date, Mr. Kampa estimates that already he has incurred about $1.5 million related to county approval, permits and fees.[113] If Segment 20 is constructed, Mr. Kampa asserted that four of the proposed holes would be wiped out, leaving the golf course "unplayable and viably unable to go forward."[114]

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[101] Pugh, Tr. at 96.
[102] *Id.* at 97-97.
[103] Schlosser, Tr. at 98.
[104] *Id.*
[105] *Id.*
[106] *Id.* at 99-101.
[107] Ogata, Tr. at 102.
[108] *Id.*
[109] Lutz, Tr. at 103.
[110] *Id.* at 104.
[111] Kampa, Tr. at 105.
[112] *Id.*
[113] *Id.*
[114] *Id.*

27. Jamie O'Brien, a resident of Regency, spoke in opposition to Segment 19.[115] Ms. O'Brien described Segment 19 as passing by a proposed school and two communities with several hundred residential ratepayers. By contrast, Ms. O'Brien described Segment 20 as passing "virtually undeveloped property" and "no residential ratepayers."[116] Ms. O'Brien maintained that the Commission's charter was to listen to residential ratepayers.[117] Therefore, Ms. O'Brien asked that the Commission do its job and oppose Segment 19.[118]

28. Michael Cody, real estate manager for DeRose Companies, opposed Segment 19.[119] Mr. Cody stated that the DeRose Companies had property under contract to purchase and develop along Segment 19.[120] Therefore, Mr. Cody asked that opposition to Segment 19 by the DeRose Companies be added to that of other residential customers and Loudoun County.[121]

29. Catherine Spage, a resident of Cameron Chase, presented testimony against Segment 19.[122] Ms. Spage contended that when she purchased her home, there were no easements or other indications that one day a transmission power line would be built adjacent to her subdivision.[123] Moreover, when comparing alternative routes, the impact of the transmission line on people who are on a golf course four hours a day should be counted as much less than the impact on people occupying a house twenty-four hours a day.[124] Ms. Spage testified that because the Loudoun County Parkway route did not require the purchase of easements, this represented the least cost route.[125] Thus, Ms. Spage urged the Commission to reject Segment 19 in favor of Segment 20 or the Loudoun County Parkway alternatives.[126]

On August 21, 2001, interested parties filed their protests and direct testimony. Protests and direct testimony were filed by the following parties: the City, the Islamic Academy, Regency, Loudoun County, Cameron Chase, DuPont Fabros, WorldCom, Broadlands, and the Park Authority.[127] A summary of the direct testimony filed by each of these parties is presented below.

The City – filed direct testimony of five witnesses. Shahram Mohsenin, director of the City's Department of Utilities, described the City's water transmission pipeline, which, in part, is

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[115] O'Brien, Tr. at 106-07.
[116] *Id.* at 106.
[117] *Id.* at 106-07.
[118] *Id.* at 107.
[119] Cody, Tr. at 108-09.
[120] *Id.* at 108.
[121] *Id.* at 109.
[122] Spage, Tr. at 110.
[123] *Id.*
[124] *Id.* at 111.
[125] *Id.* at 112.
[126] *Id.* at 113.
[127] The order of presentation in this section is based upon the order the testimonies filed by the parties were processed by the Commission's Document Control Center.

located in an easement in the W&OD Trail.[128] Mr. Mohsenin raised several concerns regarding the dangers to the City's water transmission pipeline posed by any nearby construction activity by Virginia Power.[129] In sum, Mr. Mohsenin maintained that failure to undertake adequate protections during construction by Virginia Power would result in failure of the water transmission pipeline.[130]

John Boryschuk, Jr., a utilities engineer with the City's Department of Utilities, corroborated that electric transmission line construction in close proximity to the City's water transmission pipeline would likely result in long-term failure of the pipe's joints, causing costly repairs and service outages to the City's customers, including those in Loudoun County.[131]

Earnest C. Hawkins, utility division superintendent, related specific repair experience he has had with the City's water transmission pipeline.[132] Based on this experience, Mr. Hawkins expressed concerns regarding the construction of an electric transmission line in the vicinity of the City's water transmission pipeline, especially regarding the weight of construction equipment and excavation soil, and the impact of any blasting activities.[133] If electric transmission construction is to take place near the City's water transmission pipeline, Mr. Hawkins requested that Virginia Power provide the City with detailed plans and an opportunity to present Virginia Power with suggested alternative construction methods.[134]

Richard A. Lewis, president of Openaka Corporation, Inc., an engineering consulting firm specializing in prestressed concrete pipelines, offered his assessment of the validity of the concerns expressed by the City regarding its water transmission pipeline.[135] Mr. Lewis echoed the concerns raised by other City witnesses and warned that EMF could cause electric current to flow into the water transmission pipeline, which would corrode and weaken the pipe.[136] Mr. Lewis recommended that Virginia Power undertake its construction a distance of fifteen to fifty feet from the water transmission pipeline, depending upon the construction method employed, and provide the City with an opportunity to review and provide input on Virginia Power's construction plans.[137]

Finally, Stephen W. Wright, assistant to the director of the City's Department of Utilities, furthered the City's request for the opportunity to review Virginia Power's construction plans, and work with the Company on measures to mitigate the effects of construction on the water transmission pipeline.[138]

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[128] Exhibit SM-33, at 4.
[129] *Id.* at 6-7.
[130] *Id.* at 7.
[131] Exhibit JB-34.
[132] Exhibit ECH-35, at 2-3.
[133] *Id.* at 4.
[134] *Id.* at 5-6.
[135] Exhibit RAL-36.
[136] *Id.* at 5-6.
[137] *Id.* at 6-7.
[138] Exhibit SWW-37.

During the hearing, the City and Virginia Power entered into a stipulation in which Virginia Power, among other things agreed: (i) to conduct no blasting operations, (ii) to provide the City with copies of all construction and installation plans and schedules, (iii) to provide fifteen business days' notice before commencing construction, (iv) to permit the City to monitor construction, (v) to permit no heavy equipment to cross over the water line, except on public roads, and (vi) to engage in no excavation or grading over the water line.[139]

Islamic Academy – filed the direct testimony of Anthony Nozzoli, president of the Islamic Academy. On August 30, 2001, Mr. Nozzoli amended his testimony. At the hearing, the Islamic Academy offered only Mr. Nozzoli's amended direct testimony.[140] In his amended direct testimony, Mr. Nozzoli described the proposed Islamic Academy as a K through 12, 3500-student private religious school.[141] According to Mr. Nozzoli, construction already has begun.[142] In regard to Virginia Power's proposal, Mr. Nozzoli voiced concern over associated EMF, which can pose a leukemia hazard to children.[143] Therefore, Mr. Nozzoli advocated a policy of "Prudent Avoidance," which would site high voltage transmission lines away from schools and public places.[144] In summary, Mr. Nozzoli recommended that "in no event [should the Commission] approve the siting of any high voltage power line that would be on [the Islamic Academy's] property or within 300 feet thereof."[145]

Regency – filed the testimony of two expert witnesses and eight residents of the subdivision. William M. Lewis, vice president and manager of engineering of W. M. Lewis & Associates, Inc., offered professional assessments of various alternative routings and configurations for the Greenway Line.[146] First, Mr. Lewis proposed a loop feed for the Greenway Line similar to the loop feed Virginia Power now proposes for the Beco Line.[147] Such a configuration would shorten the length of the Greenway Line and avoid the need to construct a new transmission line along the W&OD Trail.[148] Second, Mr. Lewis commented on utilizing the Loudoun County Parkway.[149] Mr. Lewis submitted that use of the median did not create any problems from a technical standpoint and that such a route would take advantage of an existing impacted right-of-way.[150] Concerns raised by VDOT regarding clear zones could be accommodated by constructing the transmission line along the side of the Loudoun County Parkway.[151] Finally, Mr. Lewis recommended an underground 230 kV transmission line using

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[139] Fairfax Exhibit 38.
[140] Exhibit AN-32; Tr. at 356-57.
[141] Exhibit AN-32, at 2.
[142] *Id.*
[143] *Id.* at 3-4.
[144] *Id.* at 4-6.
[145] *Id.* at 6.
[146] Exhibit WML-75.
[147] *Id.* at 2-3.
[148] *Id.* at 3.
[149] *Id.* at 5-8.
[150] *Id.* at 5.
[151] *Id.* at 6-8.

solid-dielectric cables if the route of Segment 19 is followed.[152] Mr. Lewis estimated the cost of an underground transmission line along Segment 19 to be between $2.9 million and $4.2 million, depending upon whether a single or double line is installed.[153] Both of these estimates are less than the Company's $7.3 million estimate for constructing Segment 19 as proposed.[154]

On September 17, 2001, Regency filed the supplemental testimony of Mr. Lewis.[155] Based on his review of the redacted contracts for electric service between Virginia Power and data center owners or developers, Mr. Lewis concluded that "[i]n general terms, the proposed [Greenway] [L]ine is extraordinarily excessive to the needs of the data centers to which it will be connected and to the capability of the proposed substation."[156] These documents show that 64.4 MVA has been contracted to be served from the Greenway Substation and that Virginia Power plans initially to install only one 75 MVA transformer at the Greenway Substation.[157] Based on this information, Mr. Lewis found that a 230 kV transmission line with a rated capacity of 1044 MVA represents unreasonable excess capacity.[158] Moreover, Mr. Lewis asserted that it would be possible to serve the proposed data center driven load with a smaller line.[159]

Regency's second expert witness was Steven D. Clauson, president and sole shareholder of Clauson Consultants, Inc.[160] Mr. Clauson, who has twenty years, experience in residential and commercial real estate valuation, determined that if Segment 19 is constructed, homes in the Regency and Cameron Chase neighborhoods will lose between 1% and 15% of their value, depending on proximity to, and view of, the proposed transmission line.[161] More specifically Mr. Clauson computed that thirty-five homes in the two subdivisions will lose between 10% and 15% of their value and another eighty homes will lose between 1% and 5% of their value.[162]

As to the testimony of the residents of Regency, Walt Purnell voiced concerns that affected homeowners will suffer diminished property values and, potentially, adverse health effects from EMF if Segment 19 is followed.[163] Gregory E. Stock explained that he and his wife added a pool and landscaping to make their backyard into a vacation spot.[164] Mr. Stock complained that a view of a transmission power line would make his home and yard a less restful place.[165] Eric J. Bergesen stated that he chose Regency over another neighborhood precisely

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[152] *Id.* at 8-12.
[153] *Id.* at 11.
[154] *Id.*
[155] Exhibit WML-76.
[156] *Id.* at 3.
[157] *Id.* at 3.
[158] *Id.* at 5.
[159] *Id.* at 6.
[160] Exhibit SDC-78.
[161] *Id.* at 3.
[162] *Id.*
[163] Exhibit WP-23.
[164] Exhibit GES-24, at 2.
[165] *Id.*

because the other neighborhood was heavily impacted by transmission facilities.[166] Mr. Bergesen is worried about the effects of EMF and the loss of between $67,500 and $100,000 in value for his house if the estimates of Mr. Clauson are correct.[167] Carol Lefchak asserted that she would have paid much less for her home if a transmission line had been present.[168] Ms. Lefchak estimated that the proposed transmission line along Segment 19 would reduce the value of her home by between $50,000 and $75,000.[169] Robert C. Jenkins advocated placing the Greenway Line along the Loudoun County Parkway similar to the location of transmission lines along Route 28.[170] Patrick H. Merrick opposed Segment 19 based on concerns for the safety of his two children, ages 10 and 11, and supported use of Segment 20 or the Loudoun County Parkway routes.[171] Also, Mr. Merrick argued that Segment 19 was the most expensive route if the estimated $1.5 million to $2.25 million in lost property value for residential homeowners is considered.[172] Joseph X. DiPrinzio, president of Regency, relayed that the vote for a special assessment to fund participation in this case was 86 to 15 in favor.[173] Mr. DiPrinzio vigorously opposed Segment 19 based on concerns for property values and the general appearance of the subdivision.[174] Alice Eelman avowed that the data center to be served from the Greenway Substation is 100% vacant and that, with one exception, she was unable to locate any of the other prospective new data centers.[175] Ms. Eelman endorsed the Loudoun County Parkway route for the Greenway Line and opposed Segment 19.[176]

Loudoun County – filed the direct testimony of Kirby M. Bowers.[177] At the hearing Charles A. Yudd, assistant to the County Administrator, adopted and presented the direct testimony of Mr. Bowers.[178] In his testimony, Mr. Yudd explained Loudoun County's opposition to Segment 19. First, Mr. Yudd claimed that the proximity of Segment 19 to existing residential communities is contrary to the County's recently adopted *Revised General Plan*.[179] Second, Mr. Yudd criticized Segment 19 for violating the County's *Economic Development Strategy Plan*, which requires that a high quality of life be maintained for the County's residents and workers.[180] Third, Mr. Yudd found that Segment 19 violates the County's adopted zoning ordinance, because Segment 19 eliminates buffer yards along the frontage of Ashburn Corporate Center and MCI WorldCom.[181] Fourth, Mr. Yudd opposed Segment 19 because of the lack of

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[166] Exhibit EJB-25, at 1.
[167] *Id.* at 2.
[168] Exhibit CL-26, at 2.
[169] *Id.*
[170] Exhibit RCJ-27.
[171] Exhibit PHM-28, at 1-2.
[172] *Id.* at 2-3.
[173] Exhibit JXD-29, at 2.
[174] *Id.* at 3.
[175] AE-30, at 2-4.
[176] *Id.* at 5-6.
[177] Exhibit CAY-71.
[178] Yudd, Tr. at 618-20.
[179] Exhibit CAY-71, at 1.
[180] *Id.* at 1-2.
[181] *Id.* at 2.

correlation between those suffering the impact of the transmission line and those benefiting from the transmission lines.[182] Fifth, Mr. Yudd pointed out that Virginia Power has yet to seek County approval for the Greenway Substation.[183] Thus, Mr. Yudd stated that it is premature and inappropriate to approve the Greenway Line.[184] Finally, Mr. Yudd faulted Virginia Power for failing to study using the right-of-way of the Loudoun County Parkway as an alternative route.[185]

Cameron Chase – filed the testimony of two witnesses. Randall B. Meadows, vice president of Cameron Chase, described the neighborhood as just under 100 homes in the $300,000 to $600,000+ price range.[186] Due to its location on an incline rising from Smiths Switch Road and because of its open landscaping, Mr. Meadows asserted that the transmission line following Segment 19 would dominate the view from virtually every home in the community.[187] Mr. Meadows contended that the transmission line would reduce the value of the homes in Cameron Chase and worried about the health risks posed by the transmission line, especially on small children, such as his own, who live adjacent to Smiths Switch Road.[188] Mr. Meadows argued that Segment 20, which would cross two proposed golf courses should be the preferable route.[189] To demonstrate the compatibility of a transmission line and a golf course, Mr. Meadows supplied several photographs of transmission lines crossing several nearby golf courses.[190] In addition, Mr. Meadows implored the Commission to consider all of Virginia Power's transmission needs for eastern Loudoun County at one time and not in two phases as proposed by the Company.[191]

Maria Edwards, a member of the board for Cameron Chase, stated that the Greenway Line following Segment 19 would pass approximately 600 feet from her home.[192] Ms. Edwards expressed concern regarding the effects of the transmission line on her family's health and the value of her home.[193] Put simply, "I don't want to live next to a power line, and I know that most other people don't want to live next to a power line either."[194] Furthermore, Ms. Edwards urged the Commission to consider carefully whether there is even a need for the line, particularly in light of the current economic downturn.[195]

DuPont Fabros – filed the testimony of two witnesses. Lammot J. DuPont, founder and principal of DuPont Fabros, testified regarding the adverse impact of Segment 19 on the Ashburn

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[182] *Id.*
[183] *Id.* at 2-3.
[184] *Id.* at 3.
[185] *Id.*
[186] Exhibit RBM-61, at 2.
[187] *Id.* at 3.
[188] *Id.* at 3-4.
[189] *Id.* at 5-6.
[190] *Id.* attached Exhibit 2.
[191] *Id.* at 7-9.
[192] Exhibit ME-63, at 2.
[193] *Id.*
[194] *Id.*
[195] *Id.* at 3.

Corporate Center, which is being developed by DuPont Fabros.[196] The Ashburn Corporate Center is located on a 120-acre parcel of land, which is zoned to be developed into approximately 2 million square feet of commercial space, adjacent to Cameron Chase along Smiths Switch Road.[197] If the Greenway Line is built following Segment 19, the Line will be built on one side of the Ashburn Corporate Center, including directly over the main entrance to the Center.[198] Mr. DuPont pointed out the irony of DuPont Fabros purchasing the land subject to a Special Exception negotiated with Loudoun and Cameron Chase to limit the height of its buildings to twenty-eight feet and to provide attractive screening landscaping along Smiths Switch Road.[199] If the Greenway Line is constructed following Segment 19, the Line, with its 120-foot transmission towers will be constructed where the "screening landscaping" is planned.[200] Consequently, Mr. DuPont opposed Segment 19. "If the line is needed, it should be built somewhere else, where it will not do such serious harm to a residential community that we have made a tremendous commitment to protect, and where any potential developers will have a better and more fair opportunity to 'plan around' and otherwise mitigate the impact of the line."[201]

Curt J. Westergard, president of Digital Design & Imaging Service, Inc., constructed a visual impact simulation of Segment 19 from the perspective of Cameron Chase and Regency.[202] The simulation employed a combination of cartography, surveying, 3d modeling, animation, photo imaging, aerial photography, and ballooning technologies.[203] The completed simulation was filed in the form of a nineteen-slide PowerPoint presentation, which documented the development of the simulation and the visual impact of the proposed Greenway Line following Segment 19.

WorldCom – filed the testimony of four witnesses representing four separate developers. The first testimony was from Mark S. Hassinger, development director for Lerner Enterprises, which is the developer for North Dulles Retail Associates, LP and Beau Meade Associates, LP.[204] These partnerships are developing two projects that will extend across 900 acres of land through which the Greenway Line would run if Segment 20 is followed.[205] Included within these developments is the Broad Run Golf course, which has received county approval for several land use applications, including a Special Exception and Zoning Concept Plan Amendment and a grading plan.[206] Mr. Hassinger expects construction on the golf course to begin in December 2001. Mr. Hassinger contended that the Greenway Line following

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[196] Exhibit LJD-64
[197] *Id.* at 2.
[198] *Id.*
[199] *Id.* at 3-4.
[200] *Id.* at 4.
[201] *Id.* at 5.
[202] Exhibit CJW-65.
[203] *Id.* at 9.
[204] Exhibit MSH-39.
[205] *Id.* at 1.
[206] *Id.* at 2.

Segment 20 would have a disruptive impact on the development of the golf course.[207] Indeed, Mr. Hassinger stated that "[t]he imposition of the [Virginia Power] transmission line along [Segment] 20 will destroy the entire golf course facility, including the two courses, the driving range, and the training academy.[208]

William L. Berry, managing general partner of the Dulles-Berry Limited Partnership, described his partnership's intention to hold its almost ninety-seven acres for investment and future sales to a major corporation for a national or regional headquarters office campus.[209] Mr. Berry described the location of his partnership's land as being between the Dulles Gateway property and the MCI WorldCom property.[210] Mr. Berry opposes Segment 20 and Segment 20-a because either route would place the transmission lines immediately adjacent to the property and interfere with the partnership's ability to attract a high-quality buyer or tenant.[211] However, Mr. Berry would support use of either Segment 20 or 20-a if Virginia Power placed the Greenway Line underground.[212]

H. Chris Antigone, managing member of Dulles Gateway Associates, LLC and of TAB I Associates, LLC, recommended Segment 19 or an alignment along the Loudoun County Parkway, and opposed Segment 20.[213] Mr. Antigone's companies own 260 acres, known as the Dulles Gateway property, that lies north of the Dulles International Airport and east of the Dulles Greenway, covering the area between the first and second interchange on the east end of the road.[214] The property also sits next to the future 606 Metro Rail Station and park-and-ride lots.[215] Due to its location, Mr. Antigone intends to develop the Dulles Gateway property for high-density, prestigious office, hotel, retail, recreational and civic uses.[216] Mr. Antigone opposed locating the Greenway Line along Segment 20 because of its unavoidable visibility.[217] Accordingly, Mr. Antigone suggests that the transmission line be located along an existing roadway or near a lower density development.[218]

Jack W. Burkart, vice president of Boston Properties, testified in support of Segment 19 and against the use of Segment 20.[219] Boston Properties owns 162 acres of property south of Waxpool Road through which Segment 20 would pass.[220] Mr. Burkart testified that Boston

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[207] *Id.*
[208] *Id.* at 4.
[209] Exhibit WLB-40.
[210] *Id.* at 1.
[211] *Id.* at 2.
[212] *Id.*
[213] Exhibit HCA-41.
[214] *Id.* at 1.
[215] *Id.* at 2.
[216] *Id.*
[217] *Id.* at 3-4.
[218] *Id.*
[219] Exhibit JWB-20.
[220] *Id.* at 1.

Properties plans to develop a covenant-controlled office park and a golf course on this land.[221] Use of Segment 20 could eliminate as many as 200 parking places from the office complex, reducing the planned density of the site, and would eliminate the proposed 18-hole golf course.[222] Furthermore, Mr. Burkart pointed out that Segment 20 would have an adverse impact on wetlands as it would travel very close to Broad Run and cross it in two places.[223] Therefore, Mr. Burkart recommended the more direct and less expensive Segment 19.[224]

Broadlands – filed the testimony of Lewis Bolan, a principal in Bolan Smart Associates, Inc., a national real estate and economic consulting organization.[225] Mr. Bolan provided an overview of the present real estate market conditions in Loudoun County, with particular focus on the development and vacancy rates for data centers, and for flex/industrial space.[226] According to Mr. Bolan, Loudoun County should have a total inventory of 14,369,317 square feet of data center and flex/industrial space, with a projected year-end 2001 vacancy rate of 3,664,186 square feet, or 25.5 percent.[227] Given the level of existing vacant space, Mr. Bolan submitted that it is unlikely that a prudent developer or property owner will pursue additional data center development at this time.[228]

Park Authority – filed the testimony of two witnesses. Paul E. McCray, park manager for the W&OD Trail, described (i) the purpose of the Park Authority, (ii) the scenic, wildlife, recreational, and historic aspects of the W&OD Trail, and (iii) the negative impacts additional transmission facilities could have on the W&OD Trail.[229] Mr. McCray explained that the Park Authority "strives to preserve open space amid the continuing development of the region . . . ."[230] The 45-mile long, 100-foot wide W&OD Trail is one of nineteen public recreational areas operated by the Park Authority.[231] According to Mr. McCray, the W&OD Trail features paved and unpaved multi-use trails, wayside facilities, natural areas, history exhibits, and parking areas, and is used by three million visitors annually.[232] The section of the W&OD Trail at issue in this case currently contains a 230 kV transmission line centered thirty feet from the southern edge of the 100-foot wide park.[233] This section of the park also contains a ten-foot wide paved path located along the park's centerline and an eight-foot wide bridle path that is approximately twenty feet from the northern edge of the park.[234] Mr. McCray listed several ways in which the W&OD Trail would be impacted negatively if an additional transmission line is constructed

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[221] *Id.*
[222] *Id.* at 2.
[223] *Id.*
[224] *Id.*
[225] Exhibit LB-42.
[226] *Id.* at 3.
[227] *Id.* at 6.
[228] *Id.* at 6-7.
[229] Exhibit PEM-60.
[230] *Id.* at 3.
[231] *Id.* at 3-4.
[232] *Id.* at 4.
[233] *Id.* at 7.
[234] *Id.*

along the tail, including: (i) possible loss of the bridle path, (ii) constraint of the area available for future trails or use, (iii) elimination of vegetation and tree buffer, (iv) increased maintenance operations, (v) reduced public enjoyment of the park, and (vi) public protection measures to maintain trail traffic during construction activities.[235]

Charles Simmons, a consultant and former vice president-construction and maintenance for Appalachian Power Company, testified on ways to minimize the impact of Virginia Power's transmission line proposals.[236] Mr. Simmons found Virginia Power's proposal to construct a double circuit loop to Beco will greatly reduce the impact of the Beco Line on the W&OD Trail.[237] Nonetheless, to minimize further the impacts of the transmission line on W&OD Trail, Mr. Simmons recommended that Virginia Power: (i) develop alternate methods of providing support for the dead-ending conductors; (ii) place any new structures at or beyond the northern boundary of the park; (iii) create visual simulations of various alternatives and share those alternatives with the Park Authority; (iv) use deglared conductor for the Beco Line; (v) trim rather than clear existing vegetation in the vicinity of the W&OD Trail; and (vi) restrict the use of herbicides along the Beco Line to the dormant season to prevent vegetation "brown-out."[238]

On August 31, 2001, Staff filed its Report. In its Report, Staff examined Virginia Power's need for the proposed facilities and reviewed whether such needs could be supplied through the use of additional distribution facilities or through lower voltage transmission facilities.[239] In addition, Staff reviewed "an analysis of potential impacts to natural resources from transmission line construction activities, as well as recommendations for minimizing those impacts and for compliance with applicable legal requirements" prepared by the Department of Environmental Quality ("DEQ") and reviewed comments submitted to DEQ by other agencies.[240] Based on its review, Staff concluded that based on the Company's load forecast, "the proposed facilities are needed to provide reliable electric service to Eastern Loudoun County."[241]

On September 14, 2001, Staff filed a Supplemental Staff Report in which it addressed whether the Greenway Line should be built underground.[242] Staff found that underground installation of the Greenway Line could have an adverse impact on the performance of the Company's network and on other anticipated system expansions in eastern Loudoun County.[243]

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[235] *Id.* at 8-9.
[236] Exhibit CS-21.
[237] *Id.* at 2.
[238] *Id.* at 2-3.
[239] Exhibit MT-58, at 3-4.
[240] *Id.* at 5; *Id.* at Attachment No. 3.
[241] Exhibit MT-58, at 6.
[242] Exhibit MT-59.
[243] *Id.* at 1-2.

On September 24, 2001, Virginia Power filed the rebuttal testimony of nine witnesses. In his rebuttal testimony, Mr. Epstein[244] asserted that the demand for data centers offering "ultra securable buildings and facilities" is increasing significantly.[245] Mr. Epstein has seen demand for his data center increase since the tragic events of September 11, due to governmental agencies and the security community seeking "multiple, heavily fortified, highly securable mission critical facilities in Northern Virginia."[246] Mr. Epstein would like to begin construction of his proposed data center campus in the first quarter of 2002 to permit completion of the first phase by the third quarter of 2002.[247] Mr. Epstein urged the Commission to approve the Beco Line as quickly as possible.[248]

Mr. Bruce updated the Company's load forecast information and defended the accuracy of such forecasts and the need for the proposed transmission facilities in eastern Loudoun County.[249] Mr. Bruce maintained that the rapid electrical load growth described in Virginia Power's Application has accelerated.[250] For example, the actual growth in coincident peak load for this area increased from 340.2 MVA for the year 2000 to 420.3 MVA for 2001, or by 23.5%.[251] Mr. Bruce stated that data centers accounted for approximately 13% of this growth.[252] Looking to the information provided by Broadlands witness Bolan, Mr. Bruce interpreted it to illustrate the importance of building the proposed transmission facilities.[253] That is, Mr. Bruce estimated that if data center operators occupied currently available space, the additional electrical load on Virginia Power's system would be approximately 256 MVA.

Donald E. Koonce, consulting engineer in the Company's Transmission Strategy and Reliability Department of Bulk Power Delivery, explained why the Greenway Line should not be installed underground and why the Greenway Line should originate in the Beaumeade Substation and not "tap" or "loop" from an existing transmission line along the W&OD Trail.[254] In addition, Mr. Koonce commented briefly on recent information regarding EMF.[255] Mr. Koonce opposed installing the Greenway Line underground because such an installation would have a detrimental effect on system reliability, would create operating problems, would increase the cost of the project from $9.9 million to $17.2 million, and would pose an environmental risk if the petroleum-based fluid that surrounds the cables were to leak.[256] Mr. Koonce recommended against a "tap" or "loop" because such a configuration would require the construction of another

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[244] The full names, positions, and employers will not be repeated for witnesses that filed or presented direct testimony, which has been described above.
[245] Exhibit CHE-82, at 2-3.
[246] *Id.* at 4.
[247] *Id.* at 5.
[248] *Id.* at 6.
[249] Exhibit JDB-85.
[250] *Id.* at 1-2.
[251] *Id.* at 2.
[252] *Id.* at 3.
[253] *Id.* at 4-5.
[254] Exhibit DEK-73, at 3-12.
[255] *Id.* at 12-13.
[256] *Id.* at 3, 6.

230 kV transmission line along the W&OD Trial.[257] Finally, Mr. Koonce pointed out that the Virginia Department of Health's Final Report to the Virginia General Assembly, dated October 31, 2000, concluded that "there is no conclusive and convincing evidence that exposure to extremely low frequency EMF emanated from nearby high voltage transmission lines is causally associated with an increased incidence of cancer or other detrimental health effects in humans . . . ."[258]

Mark S. Allen, manager of bulk power engineering-transmission for Dominion Resources Services, Inc., addressed the recommendation of Regency witness Lewis to install the Greenway Line underground.[259] Mr. Allen confirmed that the Company does consider installing 230 kV transmission lines underground when it is appropriate to do so.[260] For example, Virginia Power is considering such an installation for the Norfolk Naval Base.[261] Determining factors include whether the line is to be integrated into the transmission network, the number of customers that may be affected by a failure of the line, and the means or willingness of such customers to deal with this outage risk.[262] Also, Virginia Power is evaluating whether to use solid dielectric cable, similar to that recommended by Regency witness Lewis, instead of the pressurized oil pipe-type it normally uses.[263] Mr. Allen is aware of only four installations of dielectric cable within the United States.[264] These installations are relatively short lines in protected locations that have not been in service very long, and one of these has experienced a failure.[265]

Dr. Deana D. Rhodeside, director and co-founder of Rhodeside & Harwell, Incorporated, rebutted the testimony of Regency witness Clauson relating to the loss of property value of homes in Regency and Cameron Chase if the Greenway Line is constructed following Segment 19.[266] Dr. Rhodeside faulted Mr. Clauson's valuation methodology and argued that Mr. Clauson's results were inconsistent with other studies, including her own.[267]

Mr. Bailey addressed several issues in his rebuttal testimony including: (i) the visual impact of the Greenway Line, (ii) the environmental impact of installing the proposed transmission lines underground, (iii) the feasibility of installing the Greenway Line along the Loudoun County Parkway, (iv) the use of non-glare conductor, (v) the permit approval status of the Greenway and Beco substations, (vi) and the comments of the DEQ.[268] Mr. Bailey advised that the visual simulations developed by DuPont Fabros witness Westergard are inaccurate as they fail show the proper size and positioning of the transmission line towers and assume a

[257] *Id.* at 10-12.
[258] *Id.* at 12-13.
[259] Exhibit MSA-90.
[260] *Id.* at 2.
[261] *Id.*
[262] *Id.* at 3-4.
[263] *Id.* at 4.
[264] *Id.*
[265] *Id.* at 5.
[266] Exhibit DDR-84.
[267] *Id.*
[268] Exhibit JBB-94.

conductor wire that is four times the diameter that will be used by the Company.[269] Mr. Bailey offered several simulation photos to illustrate the correct visual impact of the Greenway Line on Regency.[270] Regarding installing the transmission line underground, Mr. Bailey maintained that such a line would require a continuous trench approximately six to eight feet wide and at least five feet deep.[271] Mr. Bailey believed that such an underground installation would raise construction issues related to dust and noise.[272] Concerning use of the Loudoun County Parkway route, Mr. Bailey claimed that placing the Greenway Line along that route would create more visual impact upon more people than placing the transmission line along Smiths Switch Road.[273] Mr. Bailey also opposed the recommendation of the Park Authority to use "non-glare" conductors as such conductors are more expensive and standard conductors eventually become "non-glare" due to weathering.[274] As to the approval status of the Greenway and Beco Substations, Mr. Bailey stated that both sites have the appropriate zoning and the Company is preparing the required applications.[275] Finally, as to the DEQ comments attached to the Staff Report, Mr. Bailey indicated that Virginia Power generally agreed and would comply with most of the DEQ requests with the exception of being required to conduct a field investigation for rare plants prior to construction.[276]

Kathy McDaniel, coordinator of bulk power forestry in the transmission lines forestry section of the bulk power delivery department of Virginia Power, proposed a landscaping plan to mitigate the visual impact of the Greenway Line on Cameron Chase and addressed forestry and herbicide issues raised by Park Authority witness Simmons.[277] Ms. McDaniel proposed to plant a twenty foot-wide buffer on the Cameron Chase side of Smiths Switch Road consisting of Leyland Cypress trees, Nellie Stevens Holly trees and Sugar Maple trees.[278] In addition, Ms. McDaniel recommended planting 12 Thorny Elaeagnus at the base of the transmission structure.[279] As to Mr. Simmon's recommendation that trees along the W&OD Trail be trimmed instead of removed, Ms. McDaniel reiterated the Company's line clearing policy and pledged to work with the Park Authority.[280] In addition, Ms. McDaniel pledged to work with the Park Authority regarding "brown-out" concerns.[281]

John Vonier provided additional EMF data for the proposed transmission line and clarified certain aspects of the proposed structures and lines, which have been described

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[269] *Id.* at 3.
[270] *Id.* at 5-6.
[271] *Id.* at 8.
[272] *Id.*
[273] *Id.* at 9-10.
[274] *Id.* at 10.
[275] *Id.* at 11.
[276] *Id.* at 11-14.
[277] Exhibit KM-93.
[278] *Id.* at 3.
[279] *Id.* at 4-5.
[280] *Id.* at 5.
[281] *Id.* at 6.

incorrectly by some Protestants.[282] In his additional EMF data, Mr. Vonier calculated EMF readings for 175 feet from the centerline of the transmission line to correspond to the closest home in Cameron Chase and 230 feet to correspond to the closest home in Regency.[283] Mr. Vonier concluded that the additional EMF data for the transmission line are comparable, if not lower than the EMF emitted from typical household appliances.[284] Furthermore, Mr. Vonier asserted that in constructing his visual simulations, DuPont Fabros witness Westergard should have used 0.977 inches for the diameter of the conductors for the lines rather than four inches, and that the width at the base of the transmission towers should have been four feet instead of the much larger structure shown in the simulation slides.[285] Also, Mr. Vonier commented on several recommendations made by Park Authority witness Simmons related to whether one or two poles should be used to connect the Beco Line, the location of those poles, and whether they should be painted.[286] Mr. Vonier pledged to provide the Park Authority information on the final design and location of the new pole and discuss how best to minimize impact on the trail while maintaining appropriate engineering standards.[287] Finally, Mr. Vonier recommended against painting the pole as a way to avoid future maintenance.[288]

Maurice M. Compton, coordinator of construction in the Bulk Power Supply Department of Virginia Power, addressed concerns raised by the City regarding its water transmission pipeline.[289] Mr. Compton pointed out that under the Company's current proposal only one tap structure, or tower, would be built near the W&OD Trail.[290] Moreover, Virginia will drill, rather than blast, to install footings and does not anticipate any construction traffic, excavation, or grading over the pipeline.[291] Further, Virginia Power has constructed facilities close to the City's pipeline without causing any damage and without the other special precautions and requirements the City seeks to impose in this case.[292] Nonetheless, Mr. Compton agreed that "[i]f requested, we will meet with the City to discuss our construction methods."[293]

DISCUSSION

In its Application, Virginia Power sought certification of the Beco Line and Greenway Line pursuant to the Utility Facilities Act, Virginia Code §§ 56-265.1 - 265.9, and for approval in accordance with § 56-46.1 of the Virginia Code. Specifically, § 56-265.2 A provides that "[i]t shall be unlawful for any public utility to construct . . . facilities for use in public utility service . . . without first having obtained a certificate from the Commission that the public

[282] Exhibit JEV-91.
[283] *Id.* at 2.
[284] *Id.* at 3.
[285] *Id.* at 3-4.
[286] *Id.* at 4-6.
[287] *Id.* at 5.
[288] *Id.* at 6.
[289] Exhibit MMC-43.
[290] *Id.* at 2.
[291] *Id.* at 3-4.
[292] *Id.* at 4-6.
[293] *Id.* at 7.

convenience and necessity require the exercise of such right or privilege." For overhead transmission lines of 150 kV or more, § 56-265.2 A also requires compliance with the provisions of § 56-46.1.

Among other things, § 56-46.1 directs the Commission to consider several factors in regards to proposed new facilities. For example, § 56-46.1 A provides as follows:

> Whenever the Commission is required to approve the construction of any electrical utility facility, it shall give consideration to ***the effect of that facility on the environment*** and establish such conditions as may be desirable or necessary to minimize adverse environmental impact. In such proceedings it shall receive and give consideration to ***all reports that relate to the proposed facility by state agencies concerned with environmental protection***; and if requested by any county or municipality in which the facility is proposed to be built, to ***local comprehensive plans*** that have been adopted pursuant to Article 3 (§ 15.2-2223 *et seq*.) of Chapter 22 of Title 15.2. Additionally, the Commission (i) may consider the effect of the proposed facility on economic development within the Commonwealth and (ii) shall consider ***any improvements in service reliability*** that may result from the construction of such facility. (emphasis added).

Furthermore, § 56-46.1 B provides as a condition of approval that the "Commission shall determine that the line is needed and that the corridor or route the line is to follow will reasonably minimize adverse impact on the scenic assets, historic districts and environment of the area concerned."

Finally, § 56-46.1 C directs the applicant to "provide adequate evidence that existing rights-of-way cannot adequately serve the needs of the company."

The parties in this case have presented four issues in regards to both the proposed Beco Line and the proposed Greenway Line. First, some of the parties have questioned the need for these lines. Second, some of the parties seek a stay in the current proceedings until Virginia Power files a more comprehensive plan to bring additional power to eastern Loudoun County. Third, Loudoun County asked whether the Commission should approve the Greenway Line before Loudoun County approves the Greenway Substation. Finally, if the lines are needed and if this proceeding goes forward, routes must be established for each transmission line. Each of these issues will be addressed separately below.

I. Need.

Virginia Power maintains that the Commission must approve the Beco and Greenway Lines if the Company is to comply with its statutory obligation to serve.[294]

[294] Virginia Power Brief at 5.

More specifically, Company witness Bruce testified that the Beco and Greenway Lines are required to meet customer demands for electricity in eastern Loudoun County reliably by 2003.[295] Mr. Bruce testified that with the installation of additional transformers and by using ties to surrounding areas, the Company's current distribution system in eastern Loudoun County could reliably serve 673 MVA.[296] Mr. Bruce reported that actual coincident peak load demand for this area since 1997 has been as follows:[297]

Year	MVA	MVA Increase	Percentage Increase
1997	243.9		
1998	280.4	+36.5	15%
1999	324.9	+44.5	16%
2000	340.2	+15.3	5%
2001	420.3	+80.1	23.5%

According to Mr. Bruce, approximately 13% of the growth experienced in 2001 was attributable to data centers.[298] Looking forward, Virginia Power expects demand from data centers to drive demand growth in eastern Loudoun County. Thus, Mr. Bruce prepared two forecasts for future demand, one including estimates of the demands for data centers currently under contract with the Company and another forecast based on contracted and potential demand from data centers. The table below shows Virginia Power's forecasts under these two scenarios.[299]

Year	MVA Contracted Only	MVA Contracted and Potential
2001	453.8	453.8
2002	587.6	610.4
2003	646.8	672.7
2004	692.2	726.9

Consequently, Mr. Bruce asserted that the Company's forecasts show that demand will exceed Virginia Power's ability to serve reliably by the year 2003.[300] However, during the hearing Mr. Bruce reiterated that in order to meet a demand in eastern Loudoun County of 673 MVA reliably, the Company would have to rely on ties to capacity outside the area.[301] Mr. Bruce pointed out that a substation in the town of Herndon, scheduled for completion in 2003 and counted on by Virginia Power to provide capacity to this area, has been delayed.[302]

[295] *Id.* at 4-5; Exhibit JDB-85, at 4.
[296] Exhibit JDB-1, at 6; Bruce, Tr. at 182-84, 189-90.
[297] Exhibit JDB-85, at 2.
[298] *Id.* at 3.
[299] *Id.* at 4.
[300] *Id.*
[301] Bruce, Tr. at 883.
[302] *Id.*

Thus, the Company warns that the facilities proposed in this case "may well be needed by the end of 2002."[303]

Staff reviewed Virginia Power's load forecasts and found "the proposed facilities are needed to provide reliable electric service to Eastern Loudoun County."[304] On brief, Staff observed that Virginia Power anticipates growth in loads associated with customers other than data centers.[305] Indeed, many of the parties to this case testified to their continued plans for development within eastern Loudoun County, including DuPont, the Islamic Academy, DullesGateway Associates, LLC, TAB I Associates, LLC, Beaumeade Associates Limited Partnership, North Dulles Retail Associates Limited Partnership, Dulles-Berry Limited Partnership, and Boston Properties Limited Partnership.[306]

Broadlands was the only party that raised questions regarding the need for the proposed transmission lines, and those questions appeared to be related solely to the Greenway Line and whether this proceeding should be stayed until Virginia Power files a more comprehensive plan to provide power to eastern Loudoun County. These issues will be addressed separately below.

Virginia Power has demonstrated that eastern Loudoun County has experienced significant growth in demand in recent years and that such growth is likely to continue for several years. The Company's load forecasts are supported by historic results, Loudoun County planning documents, and the development plans presented by various parties to this case. Moreover, no party has offered alternative or adjusted load forecasts for eastern Loudoun County. Accordingly, I find that Virginia Power has established the need for the proposed facilities.

II. Stay and Consolidation with Phase II.

Broadlands contended that this case is "Phase I" of a two-phase process for the certification of transmission lines for eastern Loudoun County.[307] Phase II of the plan refers to adding a transmission connection with an area outside eastern Loudoun County.[308] Broadlands maintained that the two phases are interrelated and interdependent and should be addressed in the same proceeding.[309] Broadlands asserted Virginia Power overstated the immediacy of the need for additional transmission capacity.[310] Consequently, Broadlands maintained that a stay will not interfere with the Company's statutory obligation to serve its customers in eastern Loudoun County.[311]

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[303] Virginia Power Brief at 5.
[304] Exhibit MT-58, at 6.
[305] Staff Brief at 2.
[306] *Id.* at 2-3.
[307] Broadlands Brief at 2.
[308] Bailey, Tr. at 446-47.
[309] Broadlands Brief at 18.
[310] *Id.* at 9-18.
[311] *Id.* at 3.

Furthermore, Broadlands differentiated between the need for the Beco Line and the need for the Greenway Line. According to Company witness Epstein, the Beco Line will serve data centers he described as "hardened," "secure," "Cyber Fortresses" that have been more in demand since September 11.[312] Broadlands conceded the current need for the Beco Line.[313] Nonetheless, Broadlands argued that declining demand for telecommunication-related or converted flex-industrial data centers eliminated the immediate need for the Greenway Line.[314] Consequently, Broadlands asserted that the only immediacy of need for the Greenway Line and Substation "results from the Company's desire to bootstrap its Phase II application by establishing a terminus point as part of Phase I for a new network connection from the Company's existing transmission lines west of Goose Creek."[315]

On brief Staff supported the motion to stay.[316] Staff relied on the record in this case and subsequent economic events to conclude that "the current lag in development allows an opportunity for more study of the most efficient and least impacting means of serving future growth in eastern Loudoun County."[317]

In their jointly filed brief, DuPont Fabros and Cameron Chase argued that Virginia Power "has only painted half of the picture."[318] That is, these parties contended that routing decisions made in this case likely will foreclose opportunities for routing in Phase II.[319] Thus, the least overall impact route may no longer be available in Phase II.[320] For example, DuPont Fabros and Cameron Chase point to the rebuttal testimony of Company witness Koonce and his opposition to configuring or looping the Greenway Line similar to the Beco Line (thereby avoiding over a half of mile of new transmission line along the W&OD Trail):

> While such a configuration would be physically possible, I would not recommend it. If, as I previously stated, the Greenway Substation is connected to a new 230 kV power source from the west and made part of the transmission network, such a "loop" from Line #227 should be reconfigured to create a direct link between the Sterling Park Substation and the ring bus at the Beaumeade Substation to provide the most reliable power source for Sterling Park Substation. This would require construction of a new third 230 kV line along the W&OD trail from the connection point to the Beaumeade Substation.[321]

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[312] Epstein, Tr. at 830.
[313] Broadlands Brief at 13-15.
[314] *Id.*
[315] *Id.* at 17.
[316] Staff Brief at 3-4.
[317] *Id.* at 4.
[318] DuPont Fabros/Cameron Chase Brief at 20.
[319] *Id.*
[320] *Id.*
[321] Exhibit DEK-73, at 11-12.

Regency also supported the motion to stay and continued or noted its objection to a number of pretrial and hearing rulings.[322]

Virginia Power opposed the motion to stay and consolidate. The Company maintained that such a delay would likely push the in-service dates of the Greenway and Beco Lines to late 2003 or early 2004.[323] Based on its current load forecasts, which show that demand for electricity in eastern Loudoun County will exceed the reliable capacity of existing facilities by 2003 or earlier, Virginia Power asserted that electric service in eastern Loudoun County should not be exposed to such risk.[324] In support Virginia Power points to the specific requests it has received from data centers for service in 2002, including those described by Mr. Epstein, which will be served by the Beco Line, and those for the recently completed data center adjacent to the site of the Greenway Substation.[325]

As discussed in my original ruling on the motion to stay and consolidate, the issue turns on the degree to which "Phase I" and "Phase II" are interrelated or interdependent. In addition, even if the projects are interrelated, if there is a strong need and tight timeline for the Greenway and Beco Lines, it still may be appropriate to proceed separately.

Interdependence of the projects

As described above, currently two substations serve eastern Loudoun County, Beaumeade, to the west and Sterling Park to the east.[326] The two substations are approximately two miles apart and are connected by a double-circuit 230 kV transmission line along the W&OD Trail.[327] The two circuits of this transmission line are designated as #274 and #227, respectively.[328] This case involves the construction of two new transmission lines, the Beco Line, linking the Beco Substation to the north, by looping into #274, and the Greenway Line, linking the Greenway Substation to the south with the Beaumeade Substation. The Phase II proposal would bring additional power into eastern Loudoun County from a source outside of this area. Thus, for the two projects to be interrelated or interdependent, decisions as to the construction of the Beco and Greenway Lines would have to limit available options for Phase II.

DuPont Fabros and Cameron Chase pointed to the rebuttal testimony of Company witness Koonce concerning the looping of the Greenway Line into #227, to demonstrate how decisions in this case could preclude Phase II options. However, during the hearing, Mr. Koonce clarified that his opposition to looping into both of the circuits between Beaumeade and Sterling Park was focused on maintaining reliable service to Sterling Park and points to the east.[329] Moreover, from a Phase II perspective, Mr. Koonce agreed that as long as the lines were

[322] Regency Brief at 37-39.
[323] Virginia Power Brief at 22.
[324] *Id.*
[325] *Id.* at 22-23.
[326] Exhibit JDB-1, at 5.
[327] *Id.*
[328] Exhibit AIM-16, at Attachment I.E.
[329] Koonce, Tr. at 924-925.

overhead, electrically, it did not make a difference which, if either, of the Beco or Greenway Lines was looped from a double circuit.[330] Also, when asked if the Company's proposal in this case made it more or less likely to propose routing a Phase II line through or to the Greenway Substation, Mr. Koonce responded:

> No, I wouldn't think so.[331]

The only limiting factor between this case and Phase II relates to the installation of underground transmission facilities. When asked the impact on Phase II of installing the Greenway Line underground, Mr. Koonce stated that the Company would find the Beco Substation more attractive for the terminus of Phase II.[332] But, as described below, of the proposed configurations for the Greenway Line, I find an underground installation not to be a viable alternative even without reference to a possible Phase II. Thus, the design and placement of transmission lines in this case does not limit the options available in Phase II. For this reason I find that any motions for a stay and consolidation should be denied.

Immediacy of Need

If the Commission were to determine that the decisions in this case unacceptably limited routing options in Phase II, then the immediacy of the need for the transmission lines becomes an issue. As described above, several parties and Staff contended that with the slowing economy, at least the Greenway Line will not be needed during the next few years. They argued that there is time to combine decisions regarding the Greenway Line with those of Phase II. They asserted that such a delay will permit further study that could produce a more efficient and least impacting solution.[333] However, as discussed in the prior section, the record fails to show how further study will produce a more efficient and least impacting solution. Virginia Power has supported the need for the Greenway and Beco Substations and Lines. Given the need for these facilities, the only areas for debate are where and when the transmission lines should be built. As discussed above, where the transmission lines are built has little bearing on the decisions to be made in Phase II.

The Company supported the immediacy of the need for the transmission lines with its load forecasts. As discussed above, these forecasts were accepted as sufficient for proving the need for the Beco and Greenway Lines. However, the precise issue here is whether Virginia Power has met its burden concerning the timing of its forecasts, especially in a situation where going forward with the construction of the Greenway and Beco Lines would limit available options in Phase II. To corroborate its load forecasts, Virginia Power offered the testimony of the developer of the data center to be served by the Beco Line, Mr. Epstein.[334] Significantly, Virginia Power failed to produce a witness with direct knowledge of the current demands and plans for the data centers to be served by the Greenway Line. This is significant for two reasons.

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[330] *Id.* at 927.
[331] *Id.* at 928.
[332] *Id.* at 923.
[333] *See*, *e.g.*, Staff Brief at 5-6.
[334] Exhibit CHE-82.

First, Mr. Epstein distinguished the demand for his "hardened" data center from other types of data centers. This bolstered the immediacy of need for his project served by the Beco Line and called into question the immediacy of need for other types of projects served by the Greenway Line. Second, the Company updated its load forecasts to reflect delays in demand from data centers to be served by the Greenway Line. In its reply brief, Virginia Power explained that "[s]uch large projects are often not completed on the originally forecasted schedule . . . ."[335] Consequently, I find that Virginia Power established that the immediacy of the need for the Beco Line is such that even if the decisions in this case limited the available options in Phase II, Virginia Power should be permitted to proceed with the Beco Line at this time. By contrast, the Company failed to meet its burden in regard to the immediacy of the need for the Greenway Line if the Commission were to find, contrary to my recommendation, that the design and location of the facilities in this case limit available options in Phase II.

III. County Approval of the Greenway Substation.

Loudoun County contended that the Greenway Line is premature because Virginia Power has yet to obtain the permit for the Greenway Substation.[336] Loudoun County recommended that "[a]t a minimum, the approval of any route needs to be specifically made subject to the receipt of approval of the [Loudoun County Planning] Commission Permit pursuant to Section 15.2-2232 of the Code of Virginia and Section 6-1100 of the Loudoun County Zoning Ordinance."[337] I agree with Loudoun County that this Commission's approval of the Greenway Line should be subject to the condition that Virginia Power obtain approval of the Greenway Substation from Loudoun County.

IV. Routes

Of the two proposed transmission lines, the route of the Beco Line is the less controversial. Virginia Power proposed only one route for the Beco Line. This route, as revised on July 16, 2001, consists of "looping" or "tapping" into circuit #274 approximately 0.7 miles east of the Beaumeade Substation and running approximately 0.9 miles northward to the Beco Substation.[338] Only the City and the Park Authority raised concerns regarding the Beco Line. The City was concerned that construction of the Beco Line could adversely impact its water transmission pipeline located along the W&OD Trail.[339] The Park Authority offered several recommendations designed to minimize the impact of the proposed Beco Line on the W&OD Trail.[340] During the proceedings, Virginia Power answered most of the concerns raised by these parties and agreed to continue to work with both parties to minimize the impact of the proposed

[335] Virginia Power Reply Brief at 3.
[336] Loudoun County Brief at 1.
[337] *Id.*
[338] Exhibit JEV-46, at 1-2; Exhibit AIM-16, Attachment I.E.; Exhibit JBB-94, Attachment JBB-R2.
[339] City Brief at 3-4.
[340] Exhibit PEM-60; Exhibit CS-21.

Beco Line.[341] Therefore, I find that the Beco Line should follow the route proposed by Virginia Power, as revised on July 16, 2001.

As described above, there were several alternative routes proposed for the Greenway Line. Virginia Power advocated Segment 19, which runs past the neighborhoods of Cameron Chase and Regency, along the edge of the Ashburn Corporate Center, near the planned site for the Islamic Academy, and past the MCI WorldCom campus.[342] Other alternative routes offered by Virginia Power or the parties include: (i) an underground installation of solid-dielectric cables following the path for Segment 19;[343] (ii) Segment 20, which follows the W&OD Trail for approximately 0.6 miles and then passes two proposed golf courses, the proposed Beaumeade Business Park, the proposed Dulles Gateway and Dulles/Berry developments, and twice crosses Broad Run;[344] (iii) Segment 20-a, which follows the same path as Segment 20 except that it avoids the proposed Dulles Gateway development by following the property line between MCI WorldCom and the proposed Dulles/Berry development;[345] (iv) Combination 19 and 20, which follows the path for Segment 20 to Waxpool Road then follows Waxpool Road to Segment 19 near the proposed site for the Islamic Academy;[346] and (v) Loudoun County Parkway, which follows the W&OD Trail for approximately 0.6 miles and then follows the Loudoun County Parkway past the proposed Beaumeade Business Park and across MCI WorldCom's campus.[347]

In analyzing the six alternative routes presented, two can be eliminated without lengthy discussion. First, Combination 19 and 20 can be eliminated from consideration as it garnered little if any interest from the participants in this case. No party has recommended or supported use of Combination 19 and 20. Second, Segment 20 can be eliminated. A number of parties endorsed use of Segment 20 as an alternative to Segment 19. However, Segment 20 and Segment 20-a are very similar, with Segment 20-a being the superior route as it is slightly shorter, avoids the proposed Dulles Gateway development, and more closely follows existing property lines. Thus, arguments in favor of Segment 20 will be applied to Segment 20-a.

Of the remaining four alternative routes, the underground installation and the Loudoun County Parkway routes both present major drawbacks, which eliminate them from further consideration. Concerning the underground installation, as Company witness Macdonald testified, "[Virginia Power's] transmission system includes about 2400 miles of overhead 230 kV lines but only about 36 miles of underground 230 kV lines."[348] Virginia Power argued that the reasons for avoiding underground transmission lines include system reliability problems related to the relatively difficult and time-consuming process for locating and repairing failures in underground transmission lines, and system performance problems related to flow imbalances

[341] Fairfax Exhibit 38; Vonier, Tr. at 982; Bailey, Tr. at 1037.
[342] Application Appendix at 20; Exhibit JBB-94, Attachment JBB-R2.
[343] Exhibit WML-75, at 8-12.
[344] Exhibit JBB-49, at 6; Exhibit JBB-94, Attachment JBB-R2.
[345] Exhibit JBB-49, at 7; Exhibit JBB-94, Attachment JBB-R2.
[346] *Id.*
[347] Exhibit JBB-49, at 8; Exhibit JBB-94, Attachment JBB-R2.
[348] Exhibit AIM-15, at 4.

created by underground transmission lines.[349] Staff's independent evaluation of an underground installation confirmed these conclusions. For example, Staff witness Tahamtani explained that he could not recommend an underground installation based upon several of these factors including concerns related to network performance and system reliability.[350] Furthermore, Company witness Koonce testified that an underground route for the Greenway Line would be vulnerable to dig-ins.[351] I find this to be a valid concern on Virginia Power's part given the relative level of future development planned for any of the possible routes in this case, including Segment 19. Accordingly, based on the seriousness of these concerns, the underground installation proposed by Regency witness Lewis should be ruled out in this case.

Turning to the Loudoun County Parkway route, though this route may represent the least-cost alternative, the visual impact of this route, along with the fact that this route essentially would bisect MCI WorldCom's campus, eliminate it from further consideration.
As Company witness Bailey testified, the Loudoun County Parkway has open, sweeping vistas, which make it impossible to screen the view of the transmission line.[352] In addition, the curved nature of the Parkway would increase the number of support towers required for the line, increasing the visual impact of the line. Based on personal observation, the open, elevated nature of the Parkway guarantees that the Greenway Line would dominate the view along the Loudoun County Parkway. In addition, the negative impact of the transmission line along the Loudoun County Parkway is magnified by the fact that the line would cut across MCI WorldCom's campus.[353] Such a crossing would make further development difficult, and would create an unnatural break through the heart of MCI WorldCom's campus. Thus, I agree with Virginia Power that the Loudoun County Parkway route should be eliminated from consideration in this case.

Throughout the case, Segments 19 and 20-a drew most of the attention of the parties. Generally, Virginia Power and every party adversely affected by Segment 20-a, namely the City, the Park Authority and WorldCom, actively supported Segment 19.[354] Conversely, parties adversely affected by Segment 19, such as Regency, Cameron Chase, and DuPont Fabros favored Segment 20-a over Segment 19.[355] The Islamic Academy did not specifically advocate for or against Segments 19 and 20-a, but it did state that it opposed routing the line through or near its property.[356] Virginia Power's maps show Segment 19 near the eastern edge of the Islamic Academy's property, along Waxpool Road.[357] Staff did not take a position as to the route for the Greenway Line. Loudoun County opposed Segment 19 and favored Segment 20-a.[358]

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[349] Virginia Power Brief at 16-18.
[350] Tahamtani, Tr. at 519-20.
[351] Koonce, Tr. at 915-16.
[352] Exhibit JBB-94, at 9-10.
[353] *See*, Exhibit JBB-94, Attachment JBB-R2.
[354] Virginia Power Brief at 15; City Brief at 3; Park Authority Brief at 2; WorldCom Brief at 2.
[355] Regency Brief at 39; DuPont Fabros and Cameron Chase Brief at 22-23.
[356] Islamic Academy Brief at 5.
[357] Exhibit JBB-94, Attachment JBB-R2.
[358] Loudoun County Brief at 2.

Based on the record, the following is a summary of the relative advantages and disadvantages of Segments 19 and 20-a. The advantages of Segment 19, relative to Segment 20-a are that Segment 19 is shorter (Segment 19 is approximately 2 miles as opposed to 3 miles for Segment 20-a)[359] and that Segment 19 would be less costly to build (Segment 19 was estimated to cost $7.3 million and Segment 20[360] was estimated to cost $8.9 million).[361] Moreover, Segment 19 will have less of an impact on wetlands and recreation areas such as the W&OD Trail. The relative advantages of Segment 20-a are that it avoids residential areas, has less of an impact on existing developments, makes better use of existing rights-of-ways, and is the route favored by local elected officials.

Considerable attention was devoted to the impact of Segment 19 on the existing residential neighborhoods of Cameron Chase and Regency, and on the DuPont Fabros Ashburn Corporate Center. This testimony included simulations of the visual impact of Segment 19 on these neighborhoods, the effect of Segment 19 on property values, and health and safety concerns regarding EMF.

For example, DuPont Fabros witness Westergard prepared and presented a visual simulation of Segment 19.[362] Mr. Westergard's simulation showed that the proposed Greenway Line following a Segment 19 route would dominate views along Smiths Switch Road. In response, Virginia Power offered to mitigate the visual impact of the line on Smiths Switch Road by placing only one tower between Cameron Chase and the Ashburn Corporate Center instead of two as shown in the simulation, aligning that one tower at the end of a row of homes, and providing a three-tiered 20-foot thick screen of trees and shrubs between Cameron Chase and Smiths Switch Road.[363] I find that Virginia Power's proposals would fail to mitigate the visual impact of the line on Smiths Switch Road between Cameron Chase and the Ashburn Corporate Center. As the visual simulations show, and as personally observed, Cameron Chase is too open and the line would be too close for Virginia Power to mitigate the visual impact of the line by altering the number and location of the towers supporting the line. Moreover, the Company's proposed landscaping is unworkable as existing distribution lines, and drainage and trail easements would push the proposed twenty-foot buffer well into the backyards of Cameron Chase landowners.[364] Virginia Power would leave it up to each landowner to decide if they wanted their backyard landscaped to screen the transmission line.[365] Finally, the Company's proposed landscaping will not reach maturity for twenty years.[366]

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[359] Application Appendix at 19-20.
[360] Virginia Power only provided a cost estimate for Segment 20 and did not provide a separate estimate for the cost of Segment 20-a. However, because Segment 20-a is 0.1 miles shorter than Segment 20, the cost for Segment 20-a should not exceed the cost of Segment 20.
[361] *Id.* at 20.
[362] Exhibit CJW-65.
[363] Virginia Power Brief at 8.
[364] McDaniel, Tr. at 1004-05.
[365] *Id.* at 1005.
[366] *Id.* at 1006-07.

In addition, Mr. Westergard's simulation shows that the proposed line along Segment 19 would affect the views from Regency.[367] These simulations show that the proposed line would be visible to Regency, despite a buffer of trees between Regency and the line.[368] Company witness Bailey disputed Mr. Westergard's simulations concerning Regency and offered several pictures simulating alternative views of the proposed line from Regency.[369] In Mr. Bailey's simulations, existing trees would completely screen the proposed line if the Company were to use 80-foot towers, and would nearly screen the proposed line if the Company were to use 110-foot towers.[370] Mr. Westergard responded by reproducing the Company's simulations showing the line visible above the trees using either the 80-foot or 110-ft towers.[371] Based on the record, and based on personal observations of the existing 230 kV line along the W&OD Trail, I find that it is likely that the proposed line will have an adverse impact on the views from Regency.

Many of the public witnesses and landowner witnesses presented by Regency and Cameron Chase expressed concern over the loss in property value they would experience if the Greenway Line were constructed along Segment 19. Regency witness Clauson, a local real estate consultant, conducted a study designed to quantify the loss in property value associated with the introduction of the Greenway Line by isolating the effects of transmission lines on market values.[372] Generally, Mr. Clauson compared the selling prices of homes impacted by transmission lines with the selling prices of otherwise similar homes not impacted by transmission lines.[373] After adjusting for other quantifiable differences between the homes, such as for differences in square footage, Mr. Clauson attributed the difference in selling price to the impact of transmission lines.[374] Mr. Clauson devised three value impact zones for the homes in Regency and Cameron Chase based on the zone's proximity to the proposed transmission line.[375] That is, Segment 19 was estimated to have: (i) no diminution in market value for some homes, (ii) diminution of from 1% to 5% in market value for some homes, and (iii) diminution in market value of between 10% to 15% for those homes closest to the proposed transmission line.[376] According to Mr. Clauson, a total of 35 homes would suffer diminution in value of between 10% and 15%, and 80 homes would lose from 1% to 5% in value.[377]

On rebuttal, Virginia Power offered the testimony of Dr. Rhodeside, who faulted Mr. Clauson for determining market value by comparing two individual homes at a single point sale and ascribing any differences to a single factor.[378] In addition, Dr. Rhodeside submitted that Mr. Clauson's results are inconsistent with published studies regarding the impact of transmission

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[367] Exhibit CJW-65.
[368] *Id.*
[369] Exhibit JBB-94, Attachments JBB5-10.
[370] *Id.*
[371] Exhibits 68-70.
[372] Exhibit SDC-78.
[373] *Id.* at 1-2.
[374] *Id.*
[375] *Id.* at 3.
[376] *Id.* at 3, Exhibit 10.
[377] *Id.* at 3.
[378] Exhibit DDR-84, at 2.

lines on property values, which usually peg the effects within + or – 10%.[379] Moreover, Dr. Rhodeside referred to studies she performed in 1992 and 1995, which found transmission lines have no impact on either sales prices or property values for homes.[380] Also, Dr. Rhodeside performed a survey of residents living immediately adjacent to a 230 kV transmission line in 1988 and found that 57% of the respondents did not expect their property values to differ from similar homes not located near transmission lines and 74% of the respondents said they would again buy a home near a transmission line.[381]

I find the testimony and studies of Mr. Clauson to be the more compelling of the two witnesses. Mr. Clauson's approach of comparing the actual sales prices of similar properties is consistent with other residential property valuations I have seen. Dr. Rhodeside's criticism of Mr. Clauson's approach does not appear to take into consideration adjustments made by Mr. Clauson for quantifiable differences in the properties. Nonetheless, the drawback to Mr. Clauson's approach is the limited size of his sample, *i.e.*, Mr. Clauson compared only six sales of homes without transmission lines to six sales of similar homes with transmission lines.[382] Dropping Mr. Clauson's diminution range of 10% to 15% to a range of 5% to 10% would bring his findings into line with published studies referred to by Dr. Rhodeside. Mr. Clauson observed that transmission lines tend to have more of an effect on the price of high-end single family homes, generally because these purchasers tend to make large initial investments, have children, and plan to stay in the home longer than with lower cost housing.[383] Because Regency and Cameron Chase contain high-end single family homes, in the $400,000 to $600,000 price range, the impact on property values would tend to fall within the upper end of the range of results. Conservatively, for the most affected homes in Regency and Cameron Chase, this should place diminution in the 5% to 10% range. Finally, as to Dr. Rhodeside's own surveys and studies, I find that these studies fail to offer any guidance as to the impact of the proposed transmission line on property values in Regency and Cameron Chase. Consequently, I find that the record in this case supports a finding that the 35 most affected homes in Regency and Cameron Chase will likely suffer a diminution in value of 5% to 10% and that 80 other homes in these neighborhoods will suffer a diminution in value of 1% to 5%.

The testimony related to the effects or lack of effects of EMF, at a minimum, demonstrates why construction of the Greenway Line likely will reduce the property values of some of the homes in the Regency and Cameron Chase neighborhoods. In sum, though there is insufficient proof to link EMF from transmission lines with specific cancer risks, concerns continue. For example, in its Application, Virginia Power provided the following conclusion from a report entitled *Report of an Advisory Group on Non-ionising Radiation. ELF Electromagnetic Fields and the Risk of Cancer* published in England on March 6, 2001, by the National Radiological Protection Board.

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[379] *Id.* at 4.
[380] *Id.* at 7-10.
[381] *Id.* at 10-13.
[382] Exhibit SDC-78, Exhibit 10.
[383] Clauson, Tr. at 798, 815.

> Laboratory experiments have provided no good evidence that extremely low frequency electromagnetic fields are capable of producing cancer, nor do human epidemiological studies suggest that they cause cancer in general. There is, however, some epidemiological evidence that prolonged exposure to higher levels of power frequency magnetic fields is associated with a small risk of leukaemia in children. In practice, such levels of exposure are seldom encountered by the general public in the UK. In the absence of clear evidence of a carcinogenic effect in adults, or of a plausible explanation from experiments on animals or isolated cells, the epidemiological evidence is currently not strong enough to justify a firm conclusion that such fields cause leukaemia in children. Unless, however, further research indicates that the finding is due to chance or some currently unrecognised artefact, the possibility remains that intense and prolonged exposures to magnetic fields can increase the risk of leukaemia in children.[384]

I find little comfort in statements that there is some evidence that exposure to EMF "is associated with a small risk of leukaemia in children" and "the possibility remains that intense and prolonged exposure to magnetic fields can increase the risk of leukaemia in children." With such statements circulating in the scientific community, it is not surprising that some people, especially parents with small children, remain concerned about the health risks associated with EMF. The testimony of many of the public witnesses in this case established the public's awareness of potential health risks associated with EMF. I find such concerns to be further evidence that construction of the proposed transmission line will likely reduce the property values in Regency and Cameron Chase.

In summary, I find that Segment 19 would have a significant adverse impact on the existing residential and commercial developments along its path. DuPont Fabros witness DuPont emphasized this point by contrasting his partially completed development and the developments in the planning stages along Segment 20, or Segment 20-a.

> We have no way to mitigate or no way to move around [the proposed transmission line].
>
> But I just wanted to clarify that I view us as in a very different position from the other developers on [Segment] 20 that can either plan around it or structure their loans or structure their financing in ways that . . . would reduce the impact to them. We have current loans in place. . . . And . . . the lenders are not going to be very happy with these types of power poles on the property. I'm not sure we're going to get appropriate financing, or if we're even going to be able to develop part of that land.[385]

[384] Virginia Power Application, Appendix at 45.
[385] DuPont, Tr. at 566.

In its Reply Brief, Virginia Power argued that Mr. DuPont's testimony regarding mitigation was speculative and that construction of the transmission line along Segment 20 or Segment 20-a would adversely impact more developers than following Segment 19.[386] I agree with Mr. DuPont that from either a physical or financial perspective, developers of completed or partially completed projects have less opportunity to alter their design or development than developers of projects that are still in their planning stages.

Accordingly, I find that Segment 20-a best satisfies the legal standards of § 56-265.2 A and § 56-46.1 of the Virginia Code. First, Segment 20-a has the support of the Loudoun County Board of Supervisors and is more consistent with local planning and zoning. Section 56-46.1 A directs the Commission to give consideration to local comprehensive plans adopted pursuant to Article 3 of Chapter 22 of Title 15.2 of the Virginia Code. Although the route for the proposed Greenway Line does not relate directly to Loudoun County's comprehensive plans, choosing a route that is more consistent with local planning and zoning is in harmony with the General Assembly's directive to have local plans considered by the Commission.

Second, Segment 20-a will follow existing easements along the W&OD Trail and follow a sewer easement from the W&OD Trail to the MCI WorldCom-Dulles/Berry property line. Section 56-46.1 C provides that "[I]n any hearing the public service company shall provide adequate evidence that existing rights-of-way cannot adequately serve the needs of the company." This provision illustrates a general preference for use of existing easements and rights-of-way. Segment 20-a is more consistent with this public policy.

Finally, Segment 20-a reasonably minimizes adverse impact on the scenic assets, historic districts and environments of the areas concerned, as required by § 56-46.1 B. As discussed above, Segment 19 will have a significant and detrimental visual impact on existing homes and businesses. Segment 20-a will not impact any existing homes and should be able to take advantage of terrain and vegetation to lessen its impact on scenic assets.

Moreover, the *FERC Guidelines for Protection of Natural, Historic, Scenic, and Recreational Values* contains the following concerning possible secondary uses of rights-of-way.

> One of the potential benefits of transmission line routes is that clearings at safe distances adjacent to transmission facilities may be used for secondary purposes. Consistent with general safety factors the following should be considered as possible secondary uses of rights-of-way to the extent permitted by the property interest involved:
>
> Cultivation of Christmas trees, elderberry and huckleberry bushes, and other nursery stock
> Parks
> Golf courses

[386] Virginia Power Reply Brief at 16-17.

Equestrian or bicycle paths
Picnic areas
Game refuges
Hiking trail routes
General agriculture
Winter sports
Orchards.[387]

Segment 19 offers little if any opportunity for secondary use. By contrast, Segment 20-a primarily affects the W&OD Trail and two proposed golf courses. Thus, secondary uses such as parks, equestrian or bicycle paths, hiking trail routes, and golf courses are all possible with Segment 20-a. Indeed, in its Application, Virginia Power stated that if one of the proposed golf courses planned along Segment 20 or Segment 20-a is developed before the transmission line is built, the wetlands impact would be limited.[388]

In addition, DEQ reviewed all of Virginia Power's proposed routes, including Segment 20-a. In its report, DEQ offers several recommendations designed to mitigate the environmental impact of the proposed transmission lines including use of Segment 20 or Segment 20-a.[389] In his rebuttal testimony, Company witness Bailey addressed each of DEQ's recommendations.[390] Generally, the Company agreed to DEQ's recommendations. One exception related to conducting a field investigation for rare plants prior to construction. Mr. Bailey stated that the Company routinely surveys for state and federally protected plant and animal species, but that DEQ's request goes beyond the scope of such surveys.[391] In its report, DEQ stated that the Department of Conservation and Recreation ("DCR") can assist with the inventory of rare plant species and that DCR will use the survey results to develop specific recommendations for minimizing impacts to these rare plants.[392] The Commission has directed surveys of rare plants in other Virginia Power cases.[393] Therefore, I find that Virginia Power should contact DCR for assistance in conducting a survey for rare plants prior to construction. Overall, DEQ's recommendations as agreed to by Virginia Power and as directed above, should ensure that the proposed transmission line minimizes its adverse environmental impact as required by § 56-46.1 A.

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[387] *Commonwealth of Virginia, State Corporation Commission, Division of Energy Regulation,* Guidelines of Minimum Requirements for Transmission Line Applications Filed Under Virginia Code Section 56-46.1 and The Utility Facilities Act, Attachment at 12.
[388] Application Appendix at 20.
[389] Exhibit MT-58, Attachment 3.
[390] Exhibit JBB-94, at 11-14.
[391] *Id.* at 12.
[392] Exhibit MT-58, Attachment 3, at 6-7.
[393] *Application of Virginia Electric and Power Company For a Certificate of Public Convenience and Necessity authorizing operation of transmission lines and facilities: 230 kV Transmission Line from Chickahominy-Darbytown 230 kV Transmission Line to White Oak Substation*, Case No. PUE960115, 1997 S.C.C. Ann. Rep. 371, 372.

Finally, Virginia Power should work to mitigate the impact that construction of Segment 20-a will have on the W&OD Trail. One option is to loop the Greenway Line into circuit #227, similar to the looping configuration for Beco Line into circuit #274. Company witness Koonce opposed such an arrangement based on concerns for the reliability of service to Sterling Park and points east.[394] Another way of minimizing the impact of the Greenway Line on the W&OD Trail is to have this line built south of the existing transmission lines along the trail. This would likely require extending the southern border of the right-of-way and could limit tree buffers. On the other hand, placing the Greenway Line south of the existing line would preserve the existing paved bicycle path and the bridle trail, which are north of the existing transmission line, and would protect the City's water transmission main, which is north of the existing trails. Virginia Power should choose one of these two options and work with the Park Authority to mitigate the impact of this project on the W&OD Trail.

FINDINGS AND RECOMMENDATIONS

In conclusion, based on the evidence and for the reasons set forth above, I find that:

1. There is a need for the Company's proposed 230 kV Beco Line and 230 kV Greenway Line;

2. The construction of the proposed transmission lines is required by the public convenience and necessity for the reasons discussed;

3. Motions to stay and consolidate this case with an anticipated future filing by the Company is denied;

4. Approval of the Greenway Line should be subject to approval of the Greenway Substation from the Loudoun County Planning Commission pursuant to § 15.2-2232 of the Virginia Code and § 6-1100 of the Loudoun County Zoning Ordinance;

5. The Company's proposed route for the Beco Line and a route following Segment 20-a, with mitigation measures as discussed, will reasonably minimize adverse impact on the scenic assets, historic districts and environment of the area concerned; and

6. Existing rights-of-way cannot adequately serve the needs of the company.

In accordance with the above findings, ***I RECOMMEND*** that the Commission enter an order that:

1. ***ADOPTS*** the findings in this Report;

2. ***GRANTS*** Virginia Power's application to construct the proposed transmission facilities;

[394] Koonce, Tr. at 924-925.

3. ***AMENDS*** Virginia Power's current certificates of public convenience and necessity to authorize construction of the proposed transmission facilities; and

4. ***DISMISSES*** this case from the Commission's docket of active cases.

COMMENTS

The parties are advised that pursuant to Rule 5 VAC 5-20-120 C of the Commission's Rules of Practice and Procedure, any comments to this Report must be filed with the Clerk of the Commission in writing, in an original and fifteen copies, within twenty-one days from the date hereof. The mailing address to which any such filing must be sent is Document Control Center, P. O. Box 2118, Richmond, Virginia 23218. Any party filing such comments shall attach a certificate to the foot of such document that copies have been mailed or delivered to all other counsel of record and to any party not represented by counsel.

Respectfully submitted,

_____
Alexander F. Skirpan, Jr.
Hearing Examiner